Antecedents and consequences of team psychological contracts

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ANTECEDENTS AND CONSEQUENCES OF TEAM PSYCHOLOGICAL CONTRACTS

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"The important thing is not to stop questioning.
Curiosity has its own reason for existence"

Albert Einstein[1]

1 interview Life Magazine, 2 May 1955, p.64

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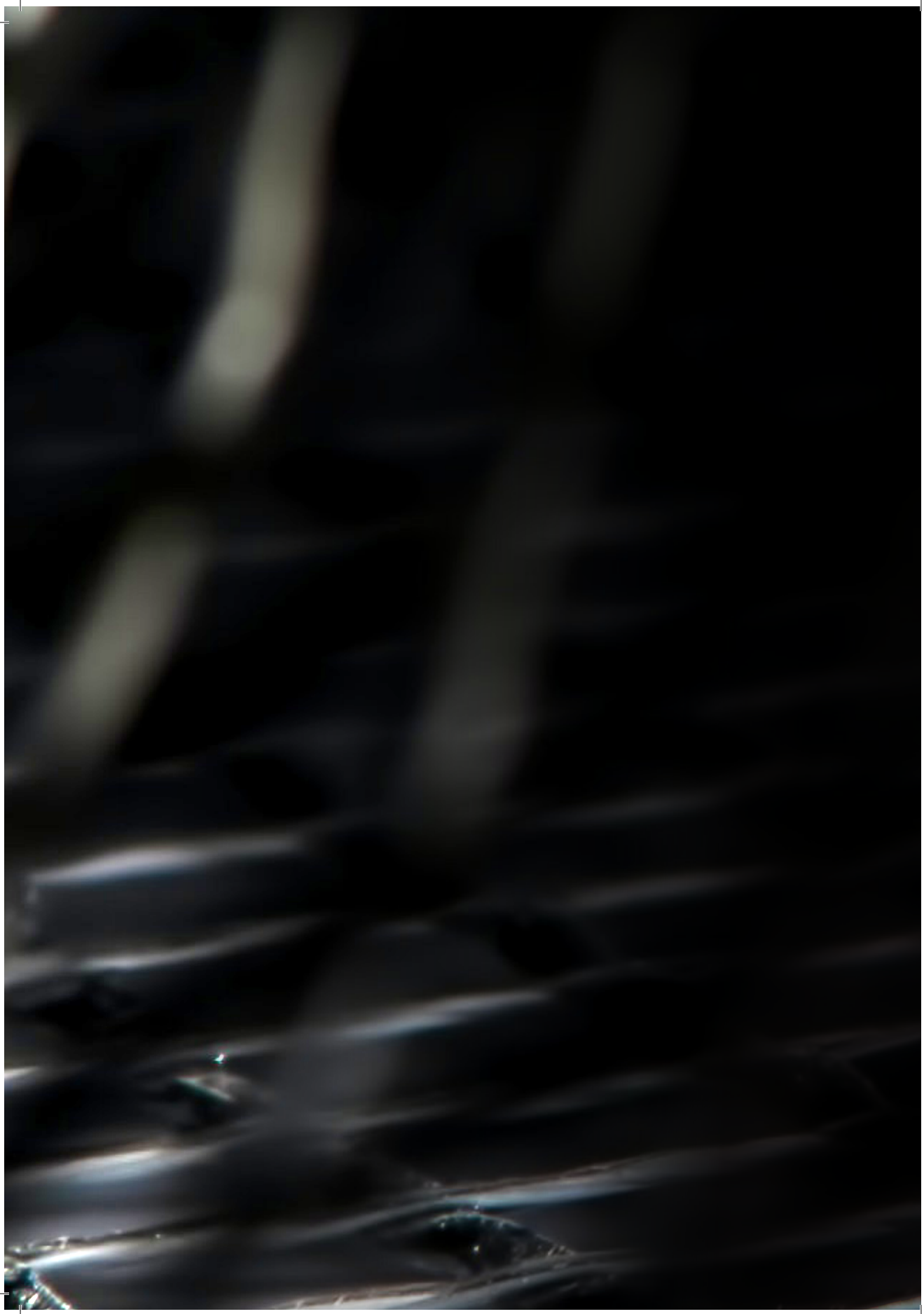

CHAPTER 1

Introduction

Over the past decades, the Dutch economy has increasingly become a service-oriented economy. In 2018, commercial and non-commercial services accounted for 81% of the total labour costs, 84% of the jobs (CBS, 2019) and almost 70% of GDP (CBS, 2020).

To achieve sustainable corporate success (Heskett et al., 1994), many service companies strive to permanently improve service quality, because of its relationship with customer satisfaction and loyalty. Research on service quality - delivering a service level that conforms to customer expectations on a consistent basis (Parasuraman et al., 1985) - has revealed that prosocial behaviours including discretionary service- or customer-oriented behaviours (e.g., Bell & Menguc, 2002; Bettencourt & Brown, 1997; Yoon & Suh, 2003) by frontline employees are critical in the service quality that customers experience. Meta-analyses have shown that positive experiences of service quality are associated with higher levels of customer satisfaction (Carrillat et al., 2009), increased customer loyalty (Hogreve et al., 2017) and improved financial performance (Black et al., 2014). The importance of frontline employees in delivering service quality implies that organizations must carefully manage the types of behaviours the frontline employees display to ensure that they engage in customer-oriented behaviours. Peccei and Rosenthal (2001, p. 837) characterised these customer-oriented behaviours as "more personalized, flexible, and receptive to individual customer demands" based on "employees' own commitment to customers".

To implement a strategy (Bowen & Ostroff, 2004) of quality service, service companies may choose to design and adopt a coherent system of HR practices (i.e., high-performance work system, HPWS) that ensures that employees have the knowledge, skills, commitment and productivity (Datta et al., 2005), as well as the motivation to meet customer needs (Liao et al., 2009). However, the effectiveness of HPWS is far from certain and is insufficient to establish a customer-oriented climate (Bettencourt et al., 2005). First and foremost, the characteristics of intangibility (Grönroos, 1978) and non-standardization (Zeithaml, 1981) of a prototypical service imply that it is difficult for service companies "to formally specify all of the behaviours that employees need to display"(Morrison, 1996, p. 496). Second, for high quality service not only the interpersonal interactions between frontline employees and customers are important, but also between frontline employees and fellow employees (in other positions) within the organization. In this regard, Gummesson (1987) has pointed to the role of the network of contacts, both formal and informal as well as professional and social. From an internal marketing perspective, employees in support functions should perform marketing-like activities (George, 1990) to assist frontline employees (i.e., their internal customers) in servicing the external customer. Third, since the emergence of teams as the core building blocks of organizations (Kozlowski & Bell, 2013), experienced service

quality is predominantly the result of interactions and relationships between co-workers in a work team. Not only attitudes and behaviours of frontline employees, but also the attitudes and behaviours of co-workers in their teams contribute to excellence.

Despite its importance, little theoretical understanding exists regarding the role of relationships between co-workers in teams in shaping service- or customer-oriented behaviours of employees and their work teams. Embedded in existing theory, this research attempts to fill this gap by introducing a new scale that measures the content and evaluations of relationships between co-workers and between employees and work teams. The validity and reliability of the new scale is tested in the prediction of various attitudes and (customer-oriented) behaviours at the individual and the team level. A start is made in the search for potential antecedents.

Relationships in organizations and employee attitudes

Organizational researchers have increasingly adopted social exchange as a theoretical foundation for understanding employee relationships in organizations (Coyle-Shapiro & Conway, 2005; Dulebohn et al., 2012). Commonly used constructs, such as perceived organizational support, leader-member exchange and psychological contracts, rely heavily on social exchange theory (SET) (see also Coyle-Shapiro & Parzefall, 2008; Rousseau, 2001; Settoon et al., 1996; Sparrowe & Liden, 1997).

According to SET, employee relationships can be conceived of as a form of social exchange, in essence "actions contingent on the rewarding reactions of others, which over time provide for mutually and rewarding transactions and relationships" (Cropanzano & Mitchell, 2005, p. 890).

Social exchange theory (Blau, 1964) is often operationalised according to differences in the parties involved in the relationships. For example, Eisenberger et al. (1986) suggested that employees "develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being" (p. 501) and labelled these beliefs as perceived organizational support (POS). Employees' perceptions of being valued and cared about should create a desire to reciprocate through higher levels of job attendance and performance (e.g., Eisenberger et al., 1990) and various forms of Organizational Citizenship Behaviours (OCB; e.g., Moorman et al., 1998; Shore & Wayne, 1993). Bishop et al. (2000) have extended the POS construct to the team environment (i.e., perceived team support).

Social exchange theory has also been used to explain relationships between employees and their supervisors (i.e., LMX, leader-member exchange). Originally defined by Dansereau et al. (1975) as "an exchange relationship which develops within the vertical dyad over time during role making activities"(p. 46), in which members reciprocate the benefits of positional resources (e.g., challenging projects) by higher involvement (Graen et al., 1982), the construct has evolved towards a prescription for generating more effective leadership (Graen & Uhl-Bien, 1995). Apart from refinements in the conceptualization of the construct, the LMX construct has been extended to cover exchanges of different qualities (social LMX versus economic LMX; e.g., Berg et al., 2017; Buch et al., 2019), to exchanges among co-workers who report to the same supervisor (CWX; e.g., Sherony & Green, 2002) and to the team environment. For example, Seers et al.(1989; 1995) proposed and empirically examined exchange relationships between members and their teams as a whole (i.e., TMX), while others conceptualize LMX relative to the average LMX within a team (RLMX; e.g., Henderson et al., 2008; Hu & Liden, 2013). Meta-analyses have shown that LMX is positively associated with task performance (Martin et al., 2016), citizenship behaviours (Ilies et al., 2007), job satisfaction (Banks et al., 2014), organizational commitment (Dulebohn et al., 2012), and negatively with turnover intentions (e.g., Gerstner & Day, 1997)

Finally, falling within the domain of social exchange is the psychological contract (PC) defined by Rousseau (Coyle-Shapiro & Kessler, 2002). In a seminal work, Rousseau (1989) re-conceptualized the psychological contract as "an individual´s belief regarding the terms and conditions of a reciprocal exchange agreement between the focal person and another party" (p. 123). Social exchange theory (Blau, 1964), and specifically the norm of reciprocity (Gouldner, 1960), has been used in the majority of psychological contract studies to describe, understand and predict the consequences of changes occurring in employee-employer relationships (Coyle-Shapiro & Kessler, 2000). Meta-analyses by Zhao et al. (2007) and Bal et al. (2008) indicate that perceptions of psychological contract breach and violation have a profound impact on job attitudes such as trust, job satisfaction and affective commitment. Turnover intentions are significantly affected, as well as in-role performance and citizenship behaviours.

Focus on co-worker psychological contracts

Psychological contracts have become increasingly popular among HR managers and scholars as a means to define employment relationships (Dabos & Rousseau, 2013). Kraak & Linde (2019) perceive a clear upward trend in psychological contract publications since early 1990s.

The popularity of psychological contracts is understandable from a practical and theoretical perspective. Guest (1998) argues that the concept furnishes scholars (and policy-makers) with a language to understand and explore (manage) changing employment relationships in an era of individualisation and declining trade union power. Furthermore, although POS, LMX as well as PC are grounded in social exchange theory and share conceptual similarities, the concept of the psychological contract offers some theoretical advantages in explaining customer-oriented behaviours of employees. While in employee relationships it always 'takes two to tango', POS is one-sided (Coyle-Shapiro & Conway, 2005) given its focus on employees' perceptions regarding the organization's commitment to them (Rhoades & Eisenberger, 2002; Wayne et al., 1997); LMX is measured from either a member or a leader perspective (i.e., member LMX versus leader LMX), which are only moderately related (Gerstner & Day, 1997; Sin et al., 2009); and PC includes both employee and employer perspectives (see Coyle-Shapiro & Kessler, 2002).

As an analytic framework, the concept of the psychological contract is very flexible, because psychological contract beliefs can be applied to a range of employment relationships, in various settings (union/non-union) and at different organizational levels (Guest & Conway, 2002). Rousseau's re-conceptualization of the psychological contract reflects this flexibility by suggesting that the psychological contract can be applied to employee - employer relationships as well as to other (non-hierarchical) employee relationships, such as between co-workers in teams (i.e., horizontal psychological contracts).

Thus, theoretical considerations, the contribution to HR practice and the flexibility of Rousseau's conceptualization of the notion make it worthwhile to examine co-worker relationships through the lens of the psychological contract.

The idea of applying the psychological contract framework to co-worker relationships is not new. For example, Marks (2001) argued that employees will be involved in multiple contract relationships within the workplace "due to a high reliance on team-based working, outsourcing or contracting" (p. 456) and "the increase in contingent work" (p. 462). Marks's plea for the conceptualization of the psychological contract with multiple foci operating on a number of levels are also found in more recent work by Laulié and Tekleab (2016) and Alcover et al. (2017).

Examining psychological contract beliefs in non-hierarchical employee relationships has been performed in just a handful of empirical studies. For example, Sverdrup (2012) and Gibbard et al. (2017) studied psychological contract beliefs among team members and their effects on team performance; Vantilborgh et al. (2012) and Griep et al. (2016) explored the role of psychological contract beliefs in relationships between volunteers and non-profit organizations; Rezania and Gurney (2016) examined contract beliefs between student-athletes and their coaches; Haggard (2012) between mentors and students and Bavik (2015) between employees and customers.

Contributions to theory and practice

Given the focus on psychological contract beliefs among co-workers in work teams, this dissertation can be considered as an extension of previous research on team psychological contracts by Sverdrup (2012) and Gibbard et al. (2017). However, the study by Gibbard et al. (2017) was solely focused on perceived breach in team psychological contracts and applied a global measure to measure those contract beliefs. The ambition of this dissertation is considerably higher: to measure both reciprocity (i.e., fulfilment perceptions in relation to other contract party's fulfilment of obligations, see Schalk & de Ruiter, 2019) *and* mutuality (i.e., degree of agreement on the obligations of the parties involved) in team psychological contracts, *and* to explore antecedents and attitudinal consequences. As the existing psychological contract scales are focused mainly on employer-employee relations and not on relations between co-workers (in a team) who are at the same level in an organization, a new facet-based measure of co-worker psychological contract beliefs in work teams has been developed (Chapter 2), in line with Rousseau's reconceptualization of the psychological contract construct (see Conway & Briner, 2009, pp. 77-84 for a summary).

Sverdrup (2012; 2013) attempted to identify the content and features (i.e., scope, flexibility, explicitness and strength) of psychological contracts between group members. Furthermore, Sverdrup explored the relationship between team psychological contracts and various aspects of team functioning. However, the robustness and replicability (i.e., internal validity, Schram, 2005) of Sverdrup's results on the effects of team psychological contracts are rather limited. That is, Sverdrup's studies are essentially of a qualitative nature with data based on interviews of samples of team members in a small number of organizations and teams. This sampling design does not allow us to assess relationships between variables in accordance with rigorous causal testing and considerably restricts the generalizability of the findings. On the other hand, the patterns found in the

relationships with team cooperation and commitment, team viability and performance add some creditability to Sverdrup's team psychological contract construct.

This research builds on Sverdrup's notion of a horizontal perspective in psychological contract research by exploring psychological contract beliefs between co-workers in teams and their relationships with employee behaviours and performance. In contrast to Sverdrup, the next chapters will attempt to estimate direct and indirect effects on attitudes and behaviours with structural modelling and path analysis. Moreover, the effort "to elucidate cause-and-effect relationships" (Cochran & Chambers, 1965, p. 234) between co-worker psychological contract beliefs and (customer-oriented) behaviours and performance has important implications for the research design.

Research design

As it takes time for causes to have effects, a causal model must allow for time lags between the variables (e.g., Ployhart & Vandenberg, 2010). That is, the model must incorporate a temporal order of the variables of interest and assume that a cause is measured at an earlier time than its presumed effect. Gollob and Reichardt (1987) argue that causal models using cross-sectional data are not satisfactory because these models omit the effects of values of prior variables and the effects of prior values of the same variables (i.e., autoregressive effects), and furthermore fail "to specify the length of the causal interval that is being studied"(p. 80).

By choosing a research design that involves either an experiment or longitudinal data (Hair et al., 2006), researchers incorporate the time element in causal inference and largely overcome the problems of a cross-sectional design. However, due to time and cost constraints the empirical studies in this dissertation are largely cross-sectional with the exception of the study in Chapter 2. In Chapter 2, data were collected from students at two different time points. As a true longitudinal design contains "at minimum three repeated observations on at least one of the substantive constructs of interest" (Ployhart & Vandenberg, 2010, p. 97), the design is only "quasi" longitudinal and can only accommodate linear relationships (Chan, 1998). The data in the other chapters were collected in employee surveys at various service companies in the Netherlands and are cross-sectional. To reduce common method variance (Podsakoff et al., 2003), both employees and their supervisors were asked to complete surveys about working environments, experiences and perceptions.

Although a longitudinal design is the preferred model in observational studies to specify relationships between variables at multiple points of time, it is not always designed properly (e.g., by ignoring autoregressive effects, Gollob & Reichardt, 1987) to be the perfect alternative for a cross-sectional design. Nevertheless, it cannot be denied that the absence of longitudinal data can produce biases in estimates of causal effects. Therefore, in hypothesis testing we do not suggest causality and have adapted the wording to fit relationships. Longitudinal studies are needed to confirm and clarify the results of the cross-sectional research in this dissertation.

Research objectives

The research objectives of this dissertation are twofold. First, to develop a psychometrically sound instrument that measures both mutuality and reciprocity in team psychological contracts for use in organizational research. Second, to apply the instrument empirically to uncover potential antecedents and consequences on attitudes and (customer-oriented) employee behaviours both at the individual and the team level. In the chapters below, we explore team psychological contracts in various roles in causal models; as predictor variable, as mediator and as moderator. However, this dissertation represents just a first step towards scientific knowledge of effects and antecedents of psychological contract beliefs in the new domain of non-hierarchical co-worker relationships. Furthermore, the empirical studies in this dissertation are limited in their judgements about causality in effects, because the datasets are largely cross-sectional. Fortunately, the large samples from multiple sources do allow some conclusions about the sizes and directions of effects on employee and team attitudes and behaviours. Therefore, the horizontal perspective of psychological contracts and the empirical findings of its effects will offer organizational researchers new insights into the psychological contract beliefs – performance relationships.

The empirical studies in the chapters below will address the following overarching research questions.

Research question 1:

Which organizational factors are related to psychological contract beliefs in non-hierarchical co-worker relationships in teams?

Research question 2:

How are psychological contract beliefs in non-hierarchical co-worker relationships related to attitudes and behaviours of employees and teams?

Outline of this dissertation

Adopting Rousseau's conceptualization of psychological contracts, a co-worker psychological contract scale is developed in the following chapter and used to measure psychological contract beliefs in the mediation and moderation models in the same chapter and subsequent chapters. The organizational factors and the employee attitudes and behaviours in the models are selected from management science and organizational psychology to test the capabilities of the new psychological contract scale to predict customer-oriented attitudes and behaviours of (frontline) employees and their work teams. In addition, insight is gained into the psychometric properties of the new scale in testing the mediation and moderation models.

The following chapters have been written in the form of an academic paper. The papers each complete the two research questions in their own way and can be read independently of each other. However, the papers share the measurement of the focal construct, i.e., psychological contract beliefs between co-workers in team environments.

Chapter 2 of this dissertation explores the extent to which employees reciprocate perceived obligations and fulfilment in the relationships with other co-workers in the work team.

Chapter 3 examines at the team level the influence of fulfilment of psychological contracts in co-worker relationships and work engagement on in-role performance and extra-role performance of work teams. A sequential mediation model is fitted to the data.

Chapter 4 tests the motivational effects of goal congruence in work teams on team performance. A mediating role of psychological contract fulfilment in co-worker relationships is proposed alongside moderating effects of task interdependence and team identification.

Chapter 5 extends psychological contract theory of co-worker relationships in work teams to the work(re)design literature. A moderation model of employee behaviour and well-being is explored in which employees perceive job autonomy and complexity as a function of psychological contract beliefs in work teams.

Chapter 6 examines the role of psychological contract beliefs across permanent and temporary workers in teams in the explanation of employee attitudes and behaviours.

Both the team obligation scale and the member obligation scale of Chapter 2 are used in difference tests, mediation and moderation models.

While Chapter 2 through 6 explore the effects and antecedents of psychological contract beliefs at either the individual or team level, Chapter 7 examines a multi-level model with fulfilment of psychological contracts in co-worker relationships in a mediating role. Perceptions of the ability, motivation and opportunity facets of a high-performance work system (HPWS) are related to individual level performance such as task proficiency and organizational citizenship behaviour, and various indicators of team performance.

Finally, the "Conclusion and Discussion" in Chapter 8 reflects on the results of the empirical studies and structures the conclusions around the research questions.

Taken together, the investigated "antecedents" and "consequences" of co-worker psychological contract beliefs in this dissertation produce a web of relationships, as shown in Figure 1.1.

The focal construct in Figure 1.1 emphasizes the reciprocity (i.e., perceptions of fulfilment) in psychological contracts between co-workers in work teams. The mutuality in psychological contracts is added to the analysis in Chapter 2 and Chapter 6. The relationships are displayed as if they are causal and the numbers correspond to the Chapter numbers. The examined relationships are either measured at the team level (Ch. 3,4), individual level (Ch. 5,6) or both (Ch. 7). The organizational factors are presented on the left side of the figure and the predicted employee and team attitudes and behaviours on the right side; these will be explicated in the respective chapters.

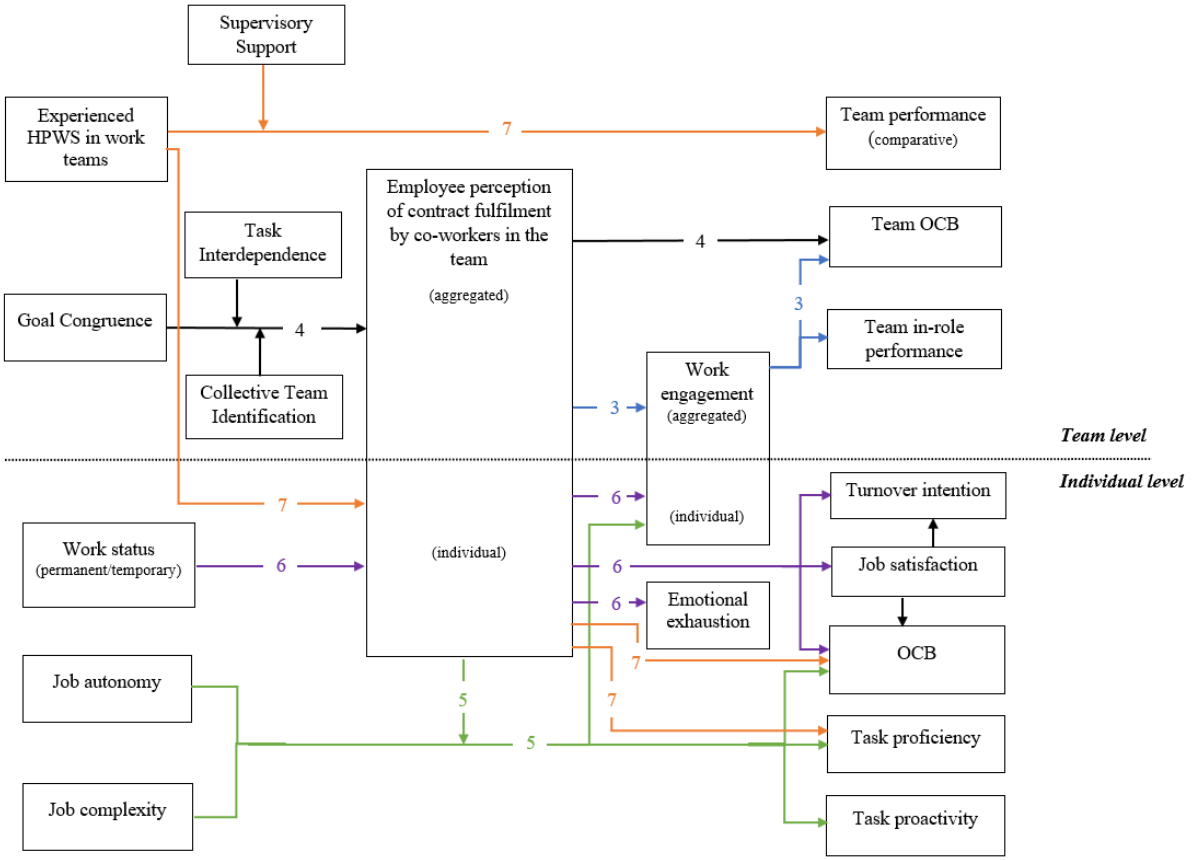

Figure 1.1: Web of relationships examined in this dissertation.

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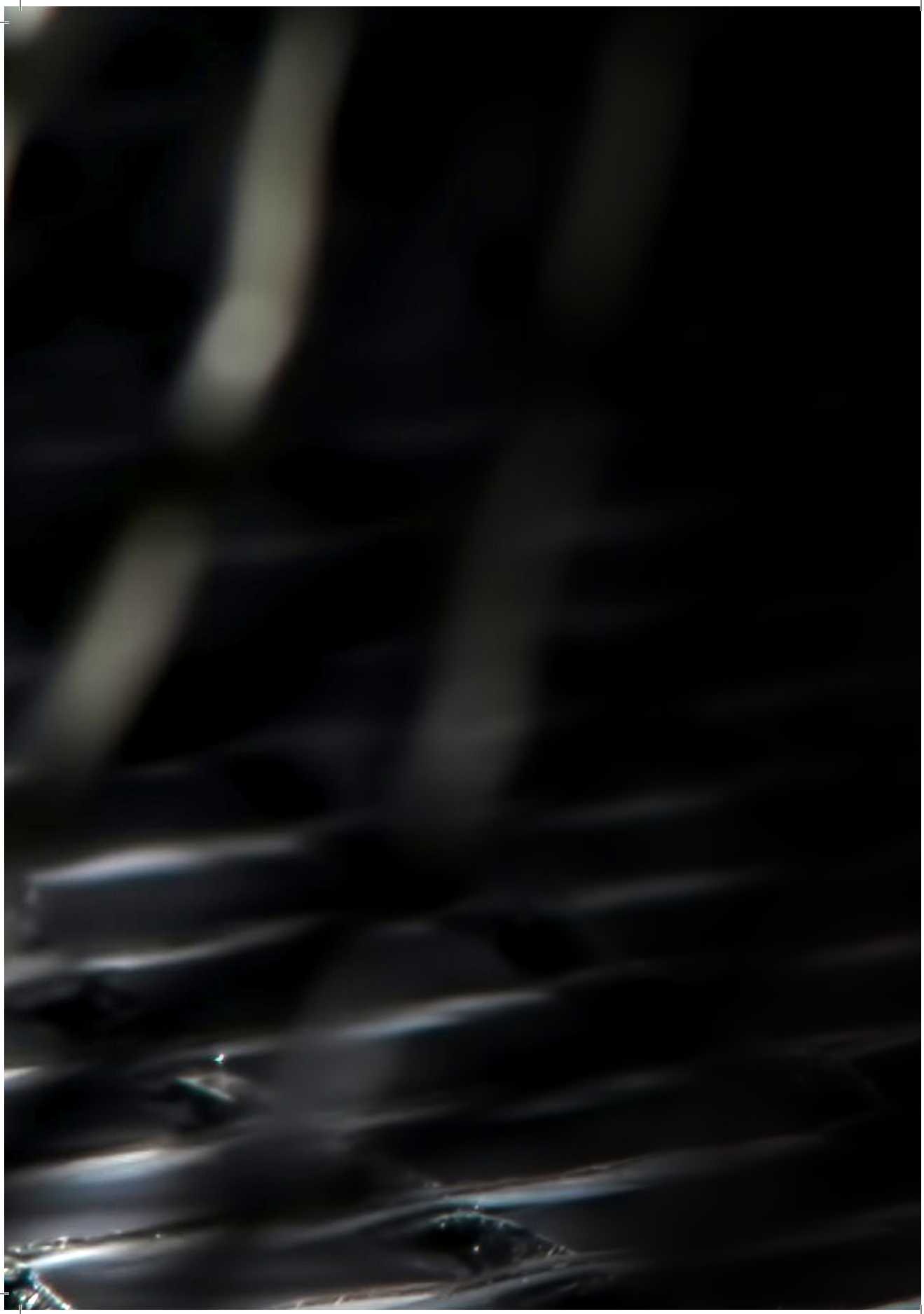

CHAPTER 2

Psychological contracts in self-directed work teams: development of a validated scale and its effects on team commitment[2]

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Abstract

This study aims to examine reciprocal exchange in teams using a psychological contract framework. Adopting Rousseau's conceptualization of the contract, we explore the extent to which team members reciprocate perceived team obligations and fulfilment by adjusting their own obligations and fulfilment. A new scale for the measurement of obligations and fulfilment was developed. Team commitment was hypothesized as a mediating variable.

The new psychological contract scale was tested in a longitudinal study design. A survey of a representative sample of 230 Dutch first-year college students nested in 73 teams was conducted.

We found that in student-teams, perceived team obligations at Time 1 are positively associated with perceived member obligations at Time 2. Furthermore, we found higher commitment to the team as the team fulfilled the obligations as perceived by its members. Contrary to the exchange theory, in student-teams, perceived fulfilment of obligations at Time 1 is not reciprocated by more obligations of its members at Time 2. No significant mediating effects are found of team commitment.

To date, this study provides the first measurement of contract fulfilment in non-hierarchical team relationships. The instrument can act as a tool to assess future team effectiveness and performance, and adjust team composition accordingly.

Keywords: psychological contracts, self-directed teams, team commitment, mediation.

Psychological contracts in self-directed work teams

An increasing number of organizations have adopted self-directed or self-managing work teams of employees in response to competitive challenges in their business environment (Spreitzer et al., 1999). Organizational "downsizing" and "rightsizing" has resulted in replacing whole layers of management, pushing decision making down to the lowest levels of an organization (Davis et al., 2004). Employees' desires for more participation, flexibility and autonomy (Wellins, 1994) have led organizations to utilize self-directed teams to meet both organizational and employee's needs. As a consequence, nowadays, employees spend more time in work teams than with anyone else at work (Neininger et al., 2010).

The increasing role of work teams in organizations makes understanding of interaction in work teams and its potential impact on extra-role behaviour and team performance much more important. However, most research about the functioning of teams fail to consider what happens when the exchanges between members are imbalanced or breached (Sverdrup, 2012). It will be argued that psychological contract theory is appropriate for examining the consequences of imbalances and breach in team exchanges. Although the theory has been applied primarily to employer - employee relationships, Rousseau's definition of a psychological contract as an "individual's belief regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (Rousseau, 1989, p. 123) suggests that it can be applied to (horizontal) team exchanges as well.

The overall objective of this study is to explore a contract perspective on team exchanges by developing a validated scale for measuring team obligations and fulfilment.

In the next section, we explain how the explanatory value of Rousseau's psychological contract construct largely rests on reciprocal obligations. It is followed by a brief review of literature on self-directed teams and team commitment. We explore other contracts-related constructs to get ideas about what will be promised and exchanged on the team-level. We then consider key elements of the research design, with separate sections for hypotheses and survey development. Based upon a summary of results, suggestions for future research are offered.

Psychological Contracts

There are many ways to conceptualize and measure psychological contracts (Freese & Schalk, 2008). In an extensive review by Aggarwal and Bhargava (2009) of contract research, theoretical conceptualizations are categorized by perspective and nature of the promise.

In this study, we adopt Rousseau's conceptualization: "a psychological contract is the individual's belief regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (Rousseau, 1989, p. 123). Unlike formal or implied contracts, the psychological contract in this conceptualization is inherently perceptual and thus one party's understanding of the contract may not be shared by the other (Robinson, 1996).

The definition of Rousseau highlights the exchange rule or normative definition (Emerson, 1976, p. 352) of reciprocity as a key mechanism in a psychological contract. Of the six rules of exchange, namely, reciprocity, rationality, altruism, group gain, status consistency, and competition (Meeker, 1971), reciprocity is probably the best known. For two actors' P and O, reciprocity can be defined as: "assigning the minimum value to the difference P's decisions have contributed to O's pay-off and the amount O's decisions have contributed to P's pay-off" (Meeker, 1971, p. 490). In this sense reciprocity corresponds to the balancing of exchanges as a consequence of reinforcement in emitted behaviour, in the words of Homans (1958).

Gouldner (1960) asserts that reciprocity can function as a moral norm "you should give benefits to those who give you benefits" (p. 170). Received benefits give rise to actions and obligations as a kind of repayment. This repayment is not unconditional; it varies with the intensity of recipients need, the resources of the donor, motives imputed to the donor and the nature of perceived constraints (Gouldner, 1960, p. 171). Reciprocity is relevant for studying work teams; it helps to initiate social interaction in groups and as a norm serves a group stabilizing function (Gouldner, 1960, pp. 174 - 176).

In Rousseau's conceptualization, each individual possesses a unique psychological contract based upon his/her understanding of the reciprocal obligations (Turnley & Feldman, 1999) in a relationship. These obligations arise out of the belief that a promise has been made either explicitly or implicitly (Coyle-Shapiro & Parzefall, 2008) and that fulfilment of those obligations by one party in the relationship is contingent upon fulfilment of obligations by the other. In this view, perceived obligations set the parameters of exchange while fulfilment captures behaviour within the exchange (Coyle-Shapiro & Kessler, 2002). Individuals may reciprocate perceived obligations and fulfilment by another party by adjusting their own obligations and fulfilment. Numerous studies have demonstrated the consequences of these adjustments on organizational commitment (Coyle-Shapiro & Kessler, 2000), trust (Bal et al., 2008), OCB (Robinson & Morrison, 1995), performance (Robinson, 1996) and turnover intentions (Robinson & Rousseau, 1994). For a meta-analysis of the impact of psychological contract breach on employee outcomes, see Zhao et al. (2007).

The social exchange theory can be used to explain why employees alter their performance when they perceive that their psychological contracts have not been fulfilled (Turnley et al., 2003). When the employee perceives a discrepancy between what is promised and what is actually received, the employee will be inclined to reduce this inequality by rebalancing the relationship. One way to do is, is to reduce their contributions to the organization. Fulfilment or even over-fulfilment of promises results in citizen behaviours as a means of reciprocate the positive actions of the other party. These behaviours can benefit the organization in general (OCBO) or specific individuals (OCBI) (Organ, 1997; Williams & Anderson, 1991), especially co-workers. Turnley et al. (2003, p. 201) suggests that fulfilment is stronger related to OCBO, than to OCBI.

Organizational factors (e.g., HR practices, social cues) and informal networks can be critical in shaping psychological contract beliefs. Co-workers are a major influencer of contract beliefs through the opinions, assurances and interpretations they provide (Dabos & Rousseau, 2013); they play a crucial role in socializing and assimilating norms.

In the informal network, certain positions give employees competitive advantages, benefits and resources (Ho et al., 2006). Positions in the network connecting otherwise isolated groups or individuals (i.e., spanning a structural hole; Burt, 1995) or connecting people who are in turn tied to many others (i.e., occupy a cohesive network; Coleman, 1988), could be very advantageous. As a consequence, they can contribute more to the organization (other party), accomplishing their goals more easily and effectively than others. In turn, these employees believe that the organization (other party) has more balanced and transactional obligations to them (Ho et al., 2006). Due to the subjective nature, such beliefs need not be mutual (i.e., agreed upon by the organization). Organizational obligations are perceived unfulfilled in the relationship.

Self-directed teams

In recent years, self-directed teams as a management style has become increasingly popular. The self-directed team is often presented as a means to empower employees in more enriched jobs (Hackman & Oldham, 1976) and thereby increase workforce satisfaction (Abbott et al., 2006), commitment (Kukenberger et al., 2015) and to humanize the workplace (Paul et al., 2000). Work performance improves and results in good citizen behaviour (Podsakoff et al., 1997).

In this study, we adopt the definition of work teams by Guzzo and Dickson (1996). They defined work teams as being: "made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social

systems (e.g., community, organization), and who perform tasks that affect others (such as customers or co-workers)" (p. 309).

The label "self-directed" in self-directed work teams can be defined in many and sometimes conflicting ways. In this study, we use the fairly broad definition of Davis et al. (2004). Self-directed work teams refer to "any team that engages in any of the decision-making typically made by a manager or supervisor" (p. 180). Decisions may include project scheduling, problem solving, selection of team members and assignment of team members to various work roles.

As a management style to promote more employee involvement, the claimed benefits of the self-directed team are partially dependent of the contents and state of psychological contracts. Involvement can have a snowballing effect: it raises aspirations and expectations, that cannot always be met. A likely outcome is reneging or incongruence (Morrison & Robinson, 1997), a perceived contract breach (Robinson & Morrison, 2000) or violation of the contract (Suazo, 2009). Breach or violation of a contract may result in various undesirable employee behaviours (Robinson, 1996; Turnley & Feldman, 1999), such as reduced willingness to engage in organizational citizen behaviours (Robinson & Morrison, 1995), decline in perceived obligations to the employer (Robinson et al., 1994), increased turnover and reduced commitment.

Commitment

In psychological contracts, only beliefs involving obligations of reciprocity are contractual. These subjective beliefs are based on promises. If an overt promise is made, the more explicit and verifiable it is, the stronger is the belief that a contract exists. Promises arise from words, whether spoken or written, but can also be derived from an interpretation of actions. In Rousseau's perspective, neither words nor actions in and of themselves convey a promise, but rather the words or actions taken in context signal that a commitment is made (Rousseau, 2001, p. 525). It is the connection between context, words and action that creates meaning. As a consequence, the concept of a psychological contract is tied to individual's commitment to an organization (Rousseau, 1989). The development of a new psychological contract scale for the team-level requires thus particular attention for the commitment part.

Organizational commitment has been studied extensively in organizational psychology. Like many constructs, commitment has been conceptualized and measured in various ways (Allen & Meyer, 1990) and consensus is lacking (O'Reilly & Chatman, 1986). Following the approach of Mowday et al. (1979), organizational commitment will be defined here as "the relative strength of an individual's identification with and involvement in a particular

organization" "It can be characterized by at least three factors: (a) A strong belief in and acceptance of the organization's goals and values; (b) A willingness to exert considerable effort on behalf of the organization; (c) A strong desire to maintain membership in the organization" (p. 226).

Team commitment can be defined similarly (Bishop et al., 2000; Bishop & Scott, 2000; Neininger et al., 2010) because teams develop goals and values that members may accept; members may exert varying degrees of effort on behalf of their team and members may have a desire to maintain team membership.

Commitment as such, may have other foci (Becker, 1992) than team or organization, e.g., attachment to supervisors, top management or customers (Vandenberghe & Michon, 2007), or may rest on different bases (O'Reilly & Chatman, 1986). In all cases, commitment as a concept describes individual's beliefs about a relationship. However, from a psychological contract perspective, commitment does not address issues of reciprocity (Robinson et al., 1994) or obligation, and at the same time involve acceptance of values that need not be part of the contract (Rousseau, 1989, p. 125). An individual might feel obligations to an organization or team, and yet at the same time reject its values. So, commitment as a concept must be treated in conjunction with psychological contracts, but as a distinct construct.

To measure the team commitment construct, we modified the short form of the Organizational Commitment Questionnaire (OCQ) of Porter et al. to refer to the team rather than to the organization. The OCQ scale has been used extensively to measure commitment and has also been successfully modified to refer to other forms of commitment (Bishop et al., 2005). The scale has shown reasonably strong evidence for the internal consistency and test-retest reliability. Levels of convergent, discriminant and predictive validity proved to be acceptable (Mowday et al., 1979).

Scale development: the building blocks of a team contract scale

The psychological contract can help to explain how and why relationships develop in teams. Team member's interactions and interdependence form the basis of developing contracts that can be fulfilled, violated or breached. In theory, the contents of those contracts encompass potentially any item that might be exchanged between the team and its members. As a consequence, the instrument (scale) measuring team obligations and fulfilment would be very long and certainly overidentify the construct.

In this research, we used the Psychological Contract Inventory (PCI) (Rousseau, 2000; Rousseau, 2008) to get some initial idea about how a horizontal psychological contract

scale for the team-level might look like. Although psychometrically sound, this tool measures employee and employer obligations, with a lot of items that cannot be used in a team-level context. To get enough items in the team obligation and the member obligation scales for acceptable validity and consistency, the items from the PCI were complemented with scale-items from psychological contract related but distinct constructs. The constructs we will using in contract scale development are POS, LMX and OCB. POS and LMX have both equivalents for the team level, and all constructs are measured in scales with acceptable psychometric properties.

POS and LMX are similar to psychological contracts in that they are grounded in the social exchange theory and rely on the norm of reciprocity. However, the widely used conceptualizations of POS and LMX in organizational research, reveal some distinctiveness from the psychological contract construct.

Perceived organizational Support (POS) captures individual beliefs "concerning the extent to which the organization values their contribution and cares about their well-being" (Eisenberger et al., 1986, p. 501). The benefits of POS are understood in reciprocal terms; an employee who sees an employer as supportive is likely to return the gesture (Cropanzano & Mitchell, 2005). When POS is high, employees are more likely to express affective commitment to the organization (Eisenberger et al., 1990; Rhoades & Eisenberger, 2002) and exhibit more organizational citizenship behaviour (Shore & Wayne, 1993).

The Leader-Member Exchange (LMX) construct focuses on the dyadic social exchange relationship between a leader (supervisor) and a member. LMX is consistently correlated with member job performance (Wayne et al., 1997), satisfaction, commitment, role perceptions and turnover intentions (Gerstner & Day, 1997).

Both POS and LMX have equivalents within the setting of a work team. Bishop et al. (2000; 2005) added Perceived Team Support (PTS) to theory, i.e., the degree to which employees believe that a team values their contribution and cares for their well-being. Bishop and his colleagues modified the validated SPOS scale of Eisenberg et al. (1990; 1986) to refer to the team rather than to the organization.

The construct of team-member exchange quality (TMX), contrasts with LMX in that it is not dyadic (Seers, 1989) because it involves a member perception of his or her (reciprocal) exchange relationship to the peer group as a team. In TMX the nature of reciprocal reinforcement is different than in LMX. Team members are more likely to be on equal footing in terms of resources and power (Banks et al., 2014), while in LMX,

subordinates lack resources and power. TMX enhances group effectiveness in self-directed teams (Seers et al., 1995) and is related to job satisfaction and organizational commitment, beyond that accountable by LMX.

Organizational citizen behaviour (OCB) is a behavioural variable related to exchanges (Organ, 1988) and reciprocity. Supportiveness of a leader or team initiates a pattern of exchange that becomes subject to the norms of reciprocity (Smith et al., 1983). A team member may choose citizen behaviour (e.g., helping behaviour, sportsmanship, altruism) as a means of reciprocation. In this study, we used the factor scales from Smith et al. (1983) and Podsakoff et al. (1997) to structure a member-obligation scale.

For PC scale development, it is not enough to copy and paste the items of POS, LMX and OCB scale measurements to solve the item problems of a horizontal contract scale. They must be modified and adapted in wording to fit in the contract framework. Some items cannot be selected for technical reasons: the factor loadings in the original scale are too low (< .5). Some items do not fit at all in a psychological contract framework and cannot be selected. Remember, the psychological contract theory includes both an employer and employee perspective; the contingent relationship between an employee's perception of the reciprocal obligations between that individual and the employer (Coyle-Shapiro & Conway, 2005).

Hypotheses

In line with Rousseau's conceptualization, perceived obligations and the extent to which those obligations are fulfilled represents the essence of the psychological contract. In this study, we separate both components to determine their relative effect. We explore psychological contracts in terms of content (perceived obligations) and state (over-fulfilment, fulfilment, breach), as a model for social exchange (Blau, 1964) between members and their self-directed team. Consistent with Rousseau's seminal work on the psychological contract, we study team-member relationships at the lowest individual level (Coyle-Shapiro & Neuman, 2004).

In examining reciprocity in self-directed teams, we adopt a unidirectional view (Coyle-Shapiro & Kessler, 2002) by exploring how members of a student team reciprocate treatment by their team. Specifically, we explore the extent to which team members reciprocate perceived team obligations and the fulfilment of those obligations by adjusting their own obligations and fulfilment. The presumed bi-directionality of the norm of reciprocity is ignored, i.e., the extent to which member's fulfilment creates an obligation on the part of the team to reciprocate.

To measure reciprocity in teams, we adopt a repeated measures model (Hair et al., 2006) design where the same team members provide several measures over time. In this study, due to limited resources, we limit our measurement to two time points: Time 1 and Time 2.

In the first set of hypotheses, team member obligations are the dependent variable and perceived team obligations and fulfilment the predictors.

H1a: In student teams, there is a positive relationship between perceived team obligations at Time 1 and perceived member obligations at Time 2.

H1b: In student teams, there is a positive relationship between perceived fulfilment of team obligations at Time 1 and perceived member obligations at Time 2.

In the second set, the emphasis is on the state of member obligations. Is in the perception of team members their obligations to the team (over-)fulfilled or not as a result from perceived team obligations?

H2a: In student teams, there is a positive relationship between perceived team obligations at Time 1 and perceived fulfilment of member obligations at Time 2.

H2b: In student teams, there is a positive relationship between perceived fulfilment of team obligations at Time 1 and fulfilment of member obligations at Time 2.

Perceived fulfilment of team obligations reflects the extent to which a team values the relationship with its members. In this sense, the relationship may be interpreted as team's commitment to its members. When the team is not fulfilling its obligations, members redress the imbalance in the relationship by reducing their commitment to the team. Thus, we expect a relationship between perceived team obligations and team commitment.

As the psychological contract captures social exchange relationships in teams, the reduced commitment as a result of not fulfilling its obligations by the team would also affect the level of reciprocity in the contract. Stated differently, a violation or breach in the contract by the team affects perceived obligations to the team and fulfilment by its members through its effects on team commitment.

Accordingly, we hypothesize that:

H3: Team commitment mediates the effects of perceived team obligations and fulfilment on perceived member obligations.

As a consequence of studying team-member relationships at the lowest level, the mediation analysis of hypothesis 3 could be depicted as in Figure 2.1 below.

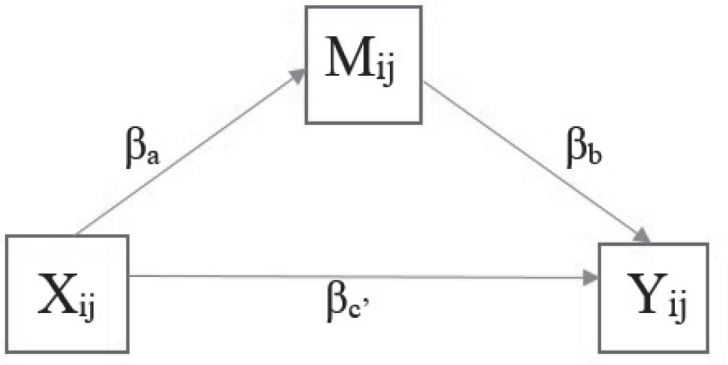

Figure 2.1: Mediator model

In this model, team obligations (X) is postulated to affect team commitment (M), and this effect then propagates causally to member obligations (Y). The *ij* subscript on the initial (X_{ij}), mediator (M_{ij}) and outcome (Y_{ij}) variables in the model, indicates that each variable can take on a unique value for each member *i* within each team *j*. Krull and MacKinnon (2001) labels this case of multilevel mediation analysis as a 1 →1→1 model.

Method

Participants and Setting

The sample for this study consisted of first year marketing and communication students from a large University of Applied Sciences in the Netherlands. The average age of the students in the sample was 19,27 years. Just over half of the respondents were male (50,2%) and the vast majority (67,4%) had completed senior general secondary education (HAVO). The sample represents an acceptable goodness-of-fit for all first-year college students (N = 101.870) in the Netherlands when the variables age (χ^2 = 4.250, p = .643) and gender (χ^2 = .887, p = .346) are concerned. The pre-university education HAVO was overrepresented in the sample.

The students were organized in 81 work teams of 6 persons maximum. These student teams met sufficiently the four criteria of Barrick et al.(1998) and Guzzo and Dickson (1996) for work teams, i.e., a (perceived) social entity with task interdependence, embedded in a student research project, performing tasks which affect others. The teams were self-directed, in that they controlled the pace of their work, distributed tasks, and scheduled work breaks. Supervision was provided to the teams by a class teacher. The teacher gave feedback, explained and interpreted criteria of the students' research project, consulted the team on an as-needed basis and evaluated the performance of the team and its members. The evaluation of performance was standardized by filling in a form with elaborated assessment criteria.

Procedure

The students completed surveys that contained measures of team commitment and content and fulfilment of team and member obligations. The survey was administered in the class-room on two times; in the middle of the lecture block (Week 3) when each team member could indicate which team obligation was provided and fulfilled and in the last project week (Week 7) when commitment and member obligations are built.

The surveys are elements of a single-stage (Blalock, 1981, p. 567) cluster sampling design measured at two points in time (Weeks 3 and 7). These measurements at two time points can provide causal inference between constructs (Hair et al., 2006).

The first survey of 230 students yielded a response rate of 67.1 per cent. The second one had a lower response rate; 194 students, 56.6 per cent.

Not all the students of the first survey could be reached at the second measurement occasion. The surveys were not anonymous. Students must provide not only their ID, but also class and team number. This was necessary to make matching on ID and team possible, but proved to be a problem for the respondents. After matching, 137 cases of 61 teams had valid values on both measurement points.

Measures

For measuring team obligations and member obligations in student-teams, a selection is made from the Psychological Contract Inventory (Rousseau, 2000; Rousseau, 2008). The Rousseau-items are complemented with items from distinct, but related constructs of social exchange, TMX (Seers, 1989; Seers et al., 1995), LMX-7 (Graen & Uhl-Bien, 1995), OCB (Podsakoff et al., 1997; Smith et al., 1983) and POS (Eisenberger et al., 1986).

The database of potential items is translated in Dutch, modified and adapted for the student team setting. New items are added. The total collection of items is pre-tested by experts in the field and 15 students. After this stage, there exists 15 team-obligation items and 17 member-obligation items, which are believed to be the content of a horizontal psychological contract.

The content-items are part of a questionnaire in which also the second component of a psychological contract is measured, the perceived fulfilment of obligations. It should be recalled that, in this study, these two components of the psychological contract are separated to measure their relative effects.

Perceived team obligations. Team members, i.e. first-year students, were asked in Week 3 of their research project to indicate the extent to which they believed their team was obliged to provide a range of items. At the same time the students were asked to indicate the extent they felt the item was provided.

The students responded to 15 Likert-like scales with responses ranging from 0 "No, not at all." to 5 "Yes, but I received much more than promised.". At the pre-analysis stage the responses 1 to 5 are recoded in -2, -1, 0, 1, 2 to measure the rate of fulfilment, where the negative sign means "perceived under-fulfilment" and the positive sign "perceived over-fulfilment". The alpha coefficients for this 15-item content and fulfilment scale were .913 and .803 respectively. The scale is presented in Appendix A.

Perceived member obligations. In the last week of their research project, the team members were asked to indicate the extent they believed they owed their team a list of 17 member obligations. The participants were provided again with Likert-like scales ranging from 0 "No, not at all." to 5 "Yes, but I delivered much more than I promised.". The responses are recoded to measure perceived obligations (coding: 0/1) and the rate of fulfilment of obligations (coding: -2 to 2), the two components of the contract. The alpha coefficients for the 17-item member obligation content and fulfilment scale were .766 and .797 respectively. The scale is presented in Appendix B.

Team commitment. Five-point Likert-type scales, with responses ranging from 1 "strongly disagree" to 5 "strongly agree", were used to measure this construct. The short form of the Organizational Commitment Questionnaire (OCQ; Mowday et al., 1979) was modified to refer to the team rather than to the organization. Item "I am extremely glad that I chose this team to work for." in the team commitment scale was deleted due to the results of a pre-testing. In the first year, the marketing and communication students are not allowed to choose their project team themselves. In the analysis stage, the results

are summed and divided by 8 to arrive at a summary score. The alpha coefficient for this eight-item scale was .831.

Confirmatory Factor Analysis

Using CFA, we assessed the convergent and discriminant validity of the survey scales: team obligations, member obligations and team commitment. We used the maximum likelihood method in the AMOS computer package to compute parameter estimates in the three-factor model. At first glance, the three-factor model did not yield an adequate overall fit to the data (χ^2 [272] = 499.940, $p < .001$), but the fit indices CFI and RMSEA are on threshold value or on the right side (CFI = .896, RMSEA = .054). All the standardized loadings in the model are above .5 and largely significant at the .001 level. We consider the chi-square test results as not problematic, because of the large sample size and covariance matrix (i.e., large number of indicator variables) in this research. It is known that these factors inflate the χ^2 value and downsize its *p*-value accordingly.

Analysis

Hierarchical regression analyses are used to test the hypotheses. To reduce the possibility of spurious relationships, three personal characteristics of the students, i.e., gender, age and educational background, are entered in Step 1 of each equation (Coyle-Shapiro et al., 2004). In Step 2, perceived team obligations and the fulfilment of team obligations were entered to predict perceived member obligations and fulfilment.

To test for a mediational model, three regression equations were needed. Separate coefficients for each equation were estimated and tested (Baron & Kenny, 1986). Seven regression analyses were performed in this study to test the indirect effects of team commitment on the relationship team obligations – member obligations in its two components, i.e., content and state.

The nested data structure, i.e., students are grouped in teams, implies testing for team effects in the team obligation – member obligation relationships. Relationships that proved to be significant are tested for fixed and random effects in intercept and slope (Heck et al., 2013).

Results

Descriptive statistics and correlations among the regression variables are reported in Table 2.1.

Table 2.1: Descriptive statistics, correlations and reliabilities.

	M	SD	3	4	5	6	7	8
1. Gender T_1	.50							
2. Education T_1	1.46							
3. Age T_1	19.27	1.56						
4. Team obligations T_1	.85	.23	.079	(.913)				
5. Team fulfilment of obligations T_1	-.04	.40	-.048	.323**	(.803)			
6. Member obligations T_2	.94	.11	.034	.424**	.060	(.766)		
7. Member fulfilment of obligations T_2	.18	.45	-.008	.202*	.206*	.108	(.797)	
8. Team commitment T_2	3.16	.65	-.129	.079	.310**	.051	.191**	(.831)

Between brackets on the diagonal: alpha coefficients
** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

As shown in Table 2.1, there is some multicollinearity in the predictors team obligations and team fulfilment of obligations. Multicollinearity means inaccuracies in estimates of coefficients and standard errors, with a substantial likelihood that a researcher will commit a Type II error (Grewal et al., 2004). This multicollinearity will be ignored, since the collinearity statistics of each predictor are at the right side, i.e. tolerance of team obligations and fulfilment are .921 and .955 respectively, and the reliabilities of the constructs are pretty good.

The results of the hierarchical regression models with member obligations and team commitment as dependent variables are shown in Table 2.2.

Hypothesis 1 predicted that team obligations and fulfilment are positively related to member obligations at a later time point. The inclusion of perceived team obligations and fulfilment in the analysis explains additional variance in member obligations ($\Delta R^2 = .192$, $\Delta F = 15.542$, $p < .01$). Perceived team obligations have a positive relationship with perceived member obligations at Time 2 ($b = .235$, $p < .01$). These results provide support for hypothesis 1a.

Table 2.2: Effects of independent and mediator variables on member obligations and team commitment.

	Member obligations			Perceived fulfilment of member obligations		Team commitment	
Model	1	2	3	1	2	1	2
(constant)	1.000 (.165)**	.764 (.155)**	.714 (.178)**	.474 (.649)	.058 (.659)	5.467 (.901)**	5.400 (.908)**
Gender	-.004 (.020)	.017 (.019)	.019 (.019)	-.035 (.079)	.021 (.080)	-.240 (.110)*	-.190 (.110)
Age	-.002 (.008)	-.001 (.007)	.000 (.007)	-.022 (.030)	-.016 (.030)	-.122 (.042)**	-.109 (.041)**
HAVO_dummy	-.038 (.055)	-.015 (.050)	-.015 (.051)	.125 (.217)	.136 (.213)	.054 (.301)	-.004 (.293)
MBO_dummy	-.020 (.057)	-.015 (.052)	-.018 (.053)	.242 (.224)	.211 (.220)	.430 (.311)	.344 (.303)
VWO_dummy	.010 (.066)	.040 (.060)	-.037 (.061)	.308 (.261)	.323 (.256)	.411 (.362)	.338 (.353)
Perceived team obligations		.235 (.042)**	.236 (.043)**		.318 (.180)		-.148 (.249)
Perceived team fulfilment		-.022 (.024)	-.026 (.025)		.168 (.102)		.451 (.141)**
Team commitment			.009 (.015)				
R^2	.014[a]	.205[b]	.208[c]	.020	.079	.102	.170
ΔF	.365	15.542**	.363	.540	4.126*	2.896*	5.177**
ΔR^2	.014	.192	.002	.020	.059	.102	.068

Notes: HAVO, MBO and VWO are the entrance levels needed for studying at a University of Applied Sciences in the Dutch educational system.

[a] Predictors: (Constant), Dummy variables, Age, Gender

[b] Predictors: (Constant), Dummy variables, Age, Gender, Team fulfilment, Team obligations

[c] Predictors: (Constant), Dummy variables, Age, Gender, Team fulfilment, Team obligations, Team commitment

** $p \leq .01$ * $p \leq .05$

Perceived fulfilment is slightly negatively related to perceived member obligations at Time 2, but this effect is not significant ($b = -.022$, $p = .360$). Thus, no support for hypothesis 1b.

Hypothesis 2 predicted that perceived team obligations and fulfilment, measured at Time 1, are positively related to perceived fulfilment of member obligations at Time 2. The results of the regression models are shown in the third and fourth columns of Table 2.2. Although the additional explained variance is significant at the 5 per cent level ($\Delta R^2 = .059$, $\Delta F = 4.126$, $p < .05$), the regression equation with all the predictors in it, is not. All its coefficients are not significant at the 5 per cent level. These results indicate that hypotheses 2a and 2b should be rejected.

Hypothesis 3 predicts that team commitment would mediate the effects of team obligations on member obligations. Although there are many methods available for testing hypothesis about mediation (Hayes, 2009), the most widely used method in psychological research to assess mediation is the causal steps approach outlined by Baron and Kenny (MacKinnon & Fairchild, 2009; MacKinnon et al., 2007; Rucker et al., 2011). Thus, the causal steps approach will be the primary method to detect mediation used in this study.

First, team commitment is regressed on the independent variables "team obligations" and "fulfilment". Second, the dependent variables "member obligations" and "fulfilment" are regressed on the independent variables. Third, the dependent variables are regressed simultaneously on the independent variables and mediator variables. Mediation is present if the relationships in the equations are all significant. For perfect mediation, the effect of an independent variable is not significant after inclusion of the mediator variable in the equation (Baron & Kenny, 1986, p. 1177). Mediation is partial if these effects are smaller but significant.

As the fifth and sixth columns of Table 2.2 show, both models are significant at the 5 per cent level. Age has a negative significant effect on commitment ($b=-.109$, $p < .01$). Students of lower age are more committed to the team. From the team obligation variables, only fulfilment is significant ($b=.451$, $p < .01$).

The results of the second step and third step of the causal steps approach are presented in the member obligations columns of Table 2.2.

As shown in Table 2.2, only the F change of the second model, i.e. the model without team commitment, is significant at the 5 per cent level. In Models 2 and 3, team obligations have a significant effect on member obligations ($b = .236$, $p <.01$)

These results indicate that team commitment is not a mediator in the relationship with member obligations. Hypothesis 3 should be rejected. A replication of the analyses above for fulfilment of member obligations as the dependent variable also confirms this decision. The smallest significance value of the regression coefficients is .071 for team obligations.

One should ask themselves if the causal steps approach to mediation above can simply be transposed to the horizontal level of teams. The students are nested in work groups. To the extent that they share common experiences, we would expect their scores on member obligations are correlated between group members (Bauer et al., 2006), which violates the independence assumption (Van Mierlo et al., 2005) of the OLS regression models above (Krull & MacKinnon, 2001). In future research, analysis of these team effects is needed.

The relationships perceived team obligations – member obligations and perceived team fulfilment – team commitment are in the causal steps approach significant. These relationships are tested for team effects. As a first step, models for both member obligations and team commitment are constructed to partition the variance into its

within- and between-group components (Heck et al., 2013). The intraclass correlation (or ICC) combined with significance tests in those models indicates if the development of a multilevel model is warranted. In the model with member obligations as outcome variable almost 22 per cent of its total variability lies between work teams (level 2). Intercepts (i.e., means) vary significantly between work teams (Wald $Z = 1.926$, $p < .05$). In the second model with team commitment as outcome variable, the ICC is 45 per cent, with significant variation in intercepts (Wald $Z = 3.626$, $p < .001$) between work teams.

As a second step for both member obligation and team commitment scales, mixed models are constructed. For the relations perceived team obligations – member obligations and perceived team fulfilment – commitment, no significant team effects are found. Although, the work teams differ in level of member obligations and commitment, there is no significant indication that they differ in degree of reciprocity.

Discussion

This research was designed to extend the traditional employer-employee psychological contract framework to self-directed student teams. Self-directed teams were broadly defined as: "any team that engages in any of the decision-making typically made by a manager or supervisor". The conceptualization of psychological contracts by Rousseau (1989) was operationalized in a questionnaire, which measures both the content of obligations as the fulfilment of obligations in teams. The items were selected from Rousseau's contract inventory (2000), complemented with validated items from other but related social exchange constructs like LMX, TMX and POS. The items were modified and adapted for the horizontal level of the student team.

The resulting scales of obligations and fulfilment of the team and its members proved to have satisfactory alpha coefficients (all $\alpha > .70$). The matched samples represented an acceptable goodness-of-fit for the Dutch first year college student-population, when age and gender are considered.

Two sets of hypotheses about team-member exchange relationships are constructed in this study; the first set measures the content of member obligations, the second one the degree of fulfilment (state). We hypothesized that team members would reduce imbalances in the relationship with their team through team commitment. Team commitment was supposed to be an intervening variable in this reciprocity process.

Our research demonstrates that in self-directed student teams perceived team obligations is the basis upon which its members reciprocate. Contrary on existing empirical findings on employer-employee psychological contracts (e.g., Coyle-Shapiro & Kessler, 2002), members do not reciprocate perceived fulfilment of team obligations by adjusting their obligations to the team and fulfilling those obligations. They reciprocate higher levels of team obligations with higher levels of member obligations. It may be, that in student-teams, a kind of PTS (or POS) process is at work; the perceived level (Coyle-Shapiro & Conway, 2005) of team support is interpreted as the degree the work team values your contribution and cares about you.

Second, perceived fulfilment of team obligations has significant effects on team commitment. When a member perceives the team obligations are fulfilled, they become more committed to the team. A result predicted by theory of PC related constructs like PTS (or POS) and backed up by empirical evidence (Bishop et al., 2000). Unfortunately, team commitment does not explain the significant team obligations – member obligations relationships in student-teams. The indirect effects proved to be insignificant. Limitations in sampling design are presumably responsible for these insignificant effects (see below).

Third, although the student teams show differences in (average) levels of member obligations and team commitment, they do not differ significantly in the studied exchange relationships. Apparently, other exogenous factors, e.g. supervisor support, are contributing in the reciprocal exchange agreements between the teams and their members.

Application of Findings

Our findings are important to supervisors and other stakeholders in educational institutions in that they suggest the existence of psychological contracts in self-directed student-teams. Fulfilment of those contracts should have effects on member attitudes and behaviours. In this study, only attitudes like perceived member obligations and team commitment are empirically tested. Future research should replicate this study and broaden its focus by adding behaviours like OCB and performance in the contracts model. Perhaps it will be possible to predict individual and team performance in advance by measuring what is promised and what is fulfilled and adapt team composition subsequently.

Limitations

This study provides preliminary evidence of the role of reciprocal obligations in exchange relationships between team members and their teams. Our research has

extended the results of previous psychological contract studies to the horizontal level of teams. However, the structural importance of indirect exchange relationships (Cook & Whitmeyer, 1992), i.e. between co-workers and colleagues, are largely ignored. The influences of social referents (Ho & Levesque, 2005) in the network of the team (Ho et al., 2006) on psychological contract beliefs could be missed in the analysis. The University of Applied Sciences in this study has tried to manage this problem by choosing for standardized procedures and composing teams in advance by a supervisor board.

Furthermore, some methodological issues must be considered in interpreting the findings of this study. First of all, the two cluster samples of students are not anonymous. This has reduced the response rate substantially and could make potential flaws in the sampling design worse.

Second, according to Kenny et al. (2003) a mediation model is essentially a causal model. To establish causality, four types of evidence (covariation, sequence, non-spurious covariation and theoretical support) are needed (Hair et al., 2006, p. 721). Our mediational analysis misses the evidence of sequence. Due to time constraints, X is in this study measured before M, but M is not measured before Y.

The sample size of only 137 students after matching and about 25 per cent small teams in the dataset, poses additional problems. With the small sample size of 137 in this dataset, the mediation analysis may not have sufficient power (Krull & MacKinnon, 2001) to detect effects.

Last but not least, focusing on significance in total or direct effects in the causal steps approach might be unnecessarily restrictive. Even if the total or direct effects are not statistically significant, significant indirect effects can be detected (MacKinnon & Fairchild, 2009; Rucker et al., 2011). The requirement of Baron and Kenny of a significant direct effect, i.e. "X-Y" test (Zhao et al., 2010), reduces the power to detect mediation, especially in the case of perfect mediation (MacKinnon et al., 2007). Perhaps, we should relax the requirement of Baron and Kenny that the total or direct effect in the mediation model is significant (Shrout & Bolger, 2002).

Despite the conceptual and methodological issues, the extension of the traditional employee-employer contract literature to the horizontal level of a team proved to be promising. The fact that we could not confirm all the hypotheses, should not be a handicap to proceed on this road.

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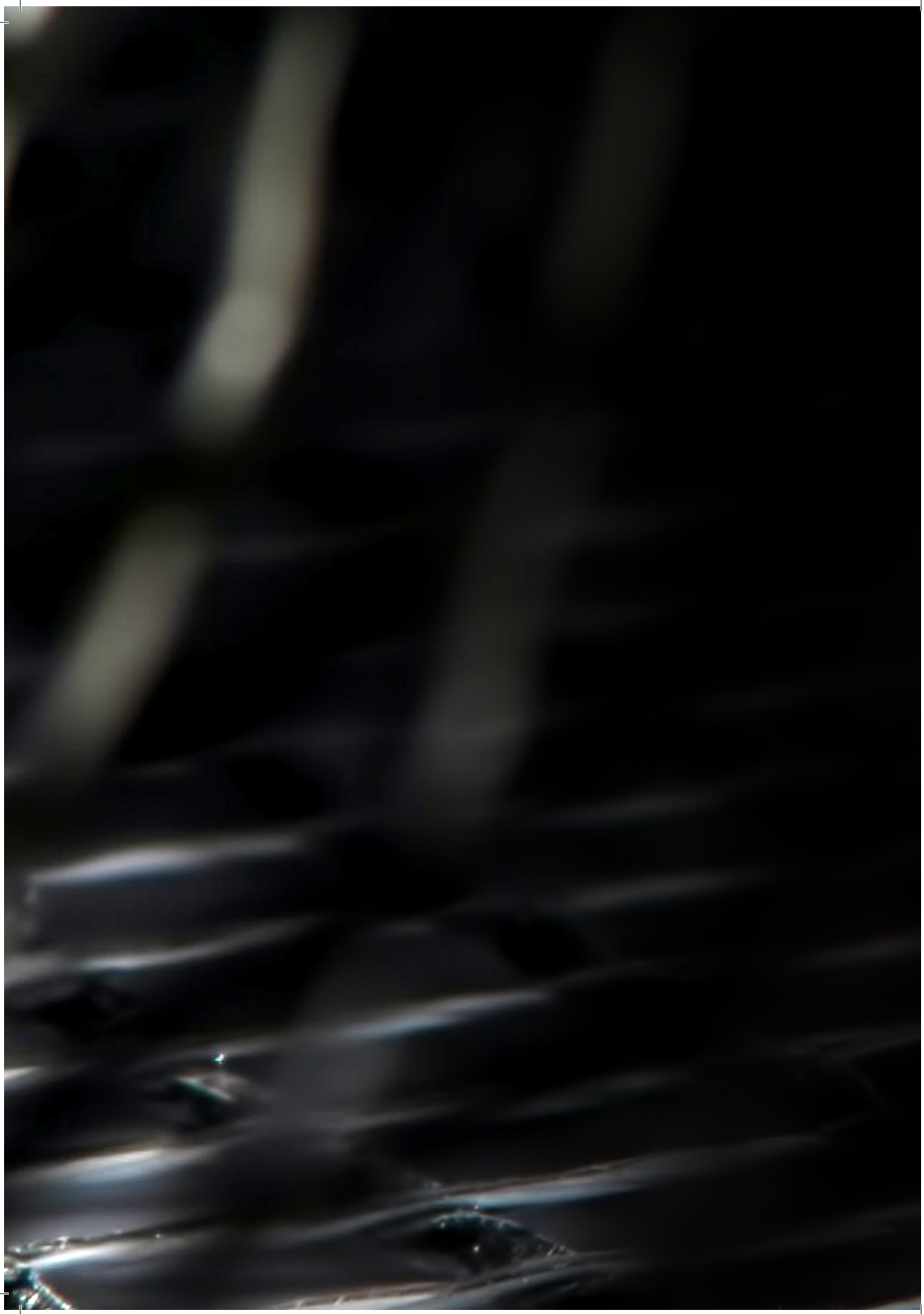

CHAPTER 3

Examining Team Performance: the role of psychological contracts and engagement among co-workers[3]

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Abstract

The aim of this study was to investigate the role of shared psychological contract beliefs between co-workers in a work team in team in-role performance and extra-role behaviours. Employees and team managers of 113 work teams answered questions about their working environment and relationships with experiences and perceptions. The data were used in CFA and structural modelling.

Laulié and Tekleab (2016) have suggested that perceptions of psychological contract fulfilment shared by team members may act as a motivational driver for team performance, team attitudes and behaviours. This study is one of the first applications of this proposition in a mediation model and empirically tested for non-hierarchical co-worker relationships.

The results indicated that evaluations of co-worker psychological contracts in work teams are significantly associated with team in-role performance and extra-role behaviours through work engagement. However, engaged employees not only contribute more to their team but also change their expectations of what the team should offer. Managers should be informed that these new- and enhanced expectations have repercussions for existing HRM practices.

Introduction

Psychological contracts, made up of employees' beliefs regarding the terms and conditions of an exchange agreement between them and another party (e.g., employer) (Rousseau, 1989), are at the foundation of employment relationships (Morrison & Robinson, 1997). The nature and contents of psychological contracts are extensively studied along with the consequences associated with its fulfilment, breach or violation. Meta-analyses have indicated that perceptions of contract breach, violation or fulfilment are related to various work-related attitudes and behaviours (e.g., Bal et al., 2008; Cantisano et al., 2008; Zhao et al., 2007).

With the emergence of work teams as the core building blocks of organizations (Kozlowski & Bell, 2013), employees spend all or most of the working time with other co-workers. And, as the definition of psychological contracts suggests, psychological contracts may also exist between co-workers in work teams. The interdependence between employees in work teams in goal attainment means interacting with other team members. Over time, employees will develop perceptions of the relationships with others in the team, which form the basis of contract-like agreements. Knowledge of fulfilment, breach or violation of those agreements (i.e., psychological contracts) can provide valuable insights in how work teams behave and perform.

This research will address the "motivational mechanism" (Chang et al., 2013) between psychological contract perceptions of co-workers and the performance and behaviour of work teams. Following Parzefall (2010), Rayton (2014) and Bordia (2017), we adopt a resource demand perspective to explain how and why co-worker psychological contract fulfilment contributes to the successful performance of work teams. Resources refer to those aspects of a job that are: "functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning and development" (Bakker & Demerouti, 2007, p. 312).

The research focuses on the team level, because in work teams perceptions of psychological contract fulfilment are shaped by social interactions (De Vos & Tekleab, 2014) and social processes (Dabos & Rousseau, 2013; Ho & Levesque, 2005). We suggest that engagement of workers mediates the relationship between co-worker contract fulfilment and team performance and behaviour. We expect that team performance and behaviour can only be linked to employee engagement if the employees are not only involved themselves, but that this involvement is in line with the perceptions of the team supervisor. That is, aggregated (i.e., team level) engagement of team

members must match with the perceptions of supervisors about engagement of their work teams to have a mediating effect.

This study contributes to psychological contract theory by its different focus on the consequences of psychological contract beliefs. Whereas traditional studies on the consequences of psychological contract fulfilment, breach and violation are focused on employee-employer/organization relationships, this study examines the effects of psychological contract beliefs in non-hierarchical relationships of co-workers in a team environment. Moreover, this study extends existing empirical work on psychological contracts by measuring effects in work teams of psychological contract beliefs on team in-role performance and team organizational citizenship behaviour (OCB) through first shared employee engagement and then supervisor-rated team engagement (i.e., sequential mediation).

Theoretical framework and hypothesis development

A psychological contract is an individual's belief "regarding reciprocal obligations" (Rousseau, 1990, p. 390). This belief is based on the "perception that a promise has been made" (e.g. career opportunities, job security) and "a consideration offered in exchange for it" (e.g. accepting a position, loyalty) (Rousseau and Tijoriwala, 1998, p. 679). Although obligations in a psychological contract can cover a range of exchange terms (Coyle-Shapiro et al., 2019), empirical studies have been focused primarily on the transactional and relational content of a psychological contract. The distinction transactional-relational contract was originally proposed by Macneil (1985) as two opposite ends of a continuum of contracts reflecting various degrees of specificity, scope and flexibility (Rousseau and McLean Parks, 1993) and has been adapted for organizational research by Rousseau and others (Conway and Briner, 2005). Transactional contracts are in essence short-term agreements with a focus on exchange of economic resources. Relational contracts are open-ended long-term agreements based upon the exchange of both economic (e.g., pay for services) and socio-emotional resources (e.g., loyalty, support) (see also Janssens et al., 2003).

With regard to the contract parties, psychological contracts have been mostly used to define and understand employee-employer relationships. However, Rousseau (1989, 1995) indicated that in line with social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960), any two or more parties can be engaged in reciprocal exchanges. Thus, psychological contract theory does not preclude psychological contract like agreements between co-workers in a work team.

Psychological contracts between co-workers in teams develop as a deliberate goal-oriented process (Shore & Tetrick, 1994), in which employees attempt to establish implicit agreements with co-workers which will address a variety of work objectives. Interacting with the team and co-workers in the team, employees infer which inducements and resources (e.g., benefits, support, feedback, coaching) should be provided in exchange for the work effort and contributions they believe to be needed to reach personal and common goals. For employees, the perceptions of what the team and co-workers in the team are obliged to them signals the team's future intent and willingness to invest in the relationship (Coyle-Shapiro, 2002). Perceptions of psychological contract fulfilment arise, when the team or co-workers in the team deliver inducements and resources that fit job demands and employee's perceived contributions to the team. Satisfying job demands (e.g., mental, emotional) and employee contributions to the team without receiving appropriate resources in return will be perceived by the employee as an inequitable employee-team relationship or as a psychological contract breach (Morrison & Robinson, 1997).

Previous research on the effects of psychological contract fulfilment on work outcomes in employee-employer relationships has shown that these favourable contract evaluations foster the willingness of employees to dedicate their efforts and abilities to work tasks (e.g., Bal, de Cooman, et al., 2013; Chang et al., 2013). However, from a resource demand perspective, meta-analysis (e.g., Cole et al., 2012; Crawford et al., 2010) and the availability of psychological theories suggest that the connection between psychological contract evaluations and engagement of employees also applies for non-hierarchical relationships between co-workers in a team environment.

Employee engagement, originally defined by Kahn (1990) as "the harnessing of organization members' selves to their work roles" (p. 694), is later defined in the job demands-resources (JD-R) framework (see Schaufeli & Taris, 2014 for a critical review) as a positive, fulfilling, work-related state of mind (Schaufeli & Bakker, 2004; Schaufeli et al., 2006) that is characterized by vigour, dedication and absorption (Schaufeli et al., 2002). Employee engagement follows from favourable evaluations of psychological contracts between co-workers as predicted by psychological theory. For example, Social Exchange Theory (SET), Self-Determination Theory (SDT) and Conservation of Resources Theory (COR) can provide theoretical foundations for the causality between favourable psychological contract evaluations and employee engagement in the relationships between co-workers.

Although scholars differ in what social exchange in relationships is and what it is not, there is consensus that social exchange involves a series of interactions "that engender feelings of personal obligations"(Blau, 1964, p. 94). Within SET, these obligations are generated between the parties in the relationship who are in a state of reciprocal interdependence (Saks, 2006). In other words, in situations where work outcomes are based on a combination of parties' efforts (Cropanzano & Mitchell, 2005) performance of one party in the exchange relationship is contingent upon (Emerson, 1976) the behaviour of the other. In teams where employees are working on common work objectives, this interdependence means that when employees receive economic and socioemotional resources from other co-workers in the team, employees feel obliged to reciprocate. One way to reciprocate available and meaningful (Kahn, 1990) resources is through levels of engagement. That is, employees will choose to engage themselves in their work roles in response to the resources received from others in the team. Devoting more time and effort in work and the team is a profound way to respond to actions of others.

Social-Determination Theory (SDT) of Deci and others can be considered as an approach to work motivation. SDT distinguishes between amotivation (i.e., not having the intention to act), intrinsic motivation and extrinsic motivation. Behaviour is intrinsically motivated, when employees perform activities for no apparent reward except the activities itself (Deci, 1972). Not intrinsically motivating activities require extrinsic motivation. That is, employees act with the intention to obtain a desired consequence or to avoid an undesired consequence, not being interested in the activity itself. However, extrinsic motivated behaviour could resemble intrinsically motivated behaviour depending on the degree the employee has internalised (which is integration in its fullest form) the behaviour in one's self (Gagné & Deci, 2005). For intrinsic motivation and internalisation to function optimally, satisfaction of *innate* psychological needs is needed (Deci & Ryan, 2000): autonomy, competence and, a more distal one, relatedness. The theory argues, based on laboratory experiments and field research, that work environments that support satisfaction of these psychological needs will enhance employees' intrinsic motivation and facilitate full internalisation of extrinsic motivation and that this will in turn lead to important work outcomes, such as work engagement (e.g., Deci et al., 2001; Van den Broeck et al., 2008), psychological well-being and mental health (e.g., Chen et al., 2015; Ryan & Deci, 2000). The theory implies that in the explanation of the motivational effect of psychological contract fulfilment in co-worker relationships, co-workers in the team must supply the inducements and resources that satisfy individual psychological needs. In other words, satisfaction of psychological needs should be part of the mutuality in employee - co-worker psychological contracts.

In the theory of Conservation of Resources (COR), employees strive to retain, build and protect resources (Hobfoll, 1989). Employees experience stress when resources are threatened with loss or are lost or when the gain of new resources failed after substantive resource investment (Hobfoll, 2002). To prevent stress, employees are motivated by the acquisition and facilitation of resources.

In situations of no stress (i.e., a perceived balance in co-worker relationships between work effort and received economic and socioemotional resources) employees will be motivated to work with attitudes that facilitate a resource surplus. By expressing "themselves physically, cognitively and emotionally during role performances" (Kahn, 1990, p. 694) employees develop a resource surplus which helps to offset the probability of a future loss. The increased willingness and involvement to work will trigger more social and psychological resources from the team, such as friendly and supporting co-workers.

In work teams favourable psychological contract evaluations and employee engagement are likely to be shared. De Vos & Tekleab (2014) argued that interactions with co-workers in the work team shape employee's perceptions of contract fulfilment (PCF). Thus, when employees interpret whether their work effort balances received economic and socioemotional resources from other co-workers in the team, they tend to be affected by social processes in or outside the team that strengthen or weaken employees' initial perceptions. Over time, interpretations will become more similar and "a state of more homogeneous perceptions of fulfilment of individual psychological contracts"(Laulié & Tekleab, 2016, p. 664) will be created. In other words, a *shared individual PCF* emerges from employee's perceptions. Extending the conceptualization of Laulié and Tekleab (2016) of the construct to co-worker relationships, shared individual PCF is defined in this study as the convergence of individual psychological contract evaluations in teams. As a direct consensus model (see for a typology of composition models, Chan, 1998) shared individual PCF is an aggregation of individual level perceptions of PCF in teams.

In addition to individual fulfilment, it is expected that employee engagement will be shared in teams - a common idea on how the team expresses vigour, dedication and absorption (Torrente et al., 2012a). The frequent interactions among co-workers in the team offer ample opportunities to express feelings and recognize those of others, which facilitates processes of emotional contagion (Spoor & Kelly, 2004), behavioural entrainment (Kelly & Barsade, 2001) and comparison (Barsade, 2002). Furthermore, working together means sharing many experiences, which affect each other's moods (Ilies et al., 2007) and work-related state of mind.

Thus, the likelihood of shared individual PCF and shared employee engagement in work teams implies that perceptions of psychological contract fulfilment and engagement are (also) positively associated at the team level. Therefore, we posit that:

H1: Shared (aggregated) perceptions of psychological contract fulfilment in work teams are positively related to shared (aggregated) employee engagement.

As Kahn (1990) suggested, employee engagement should translate into higher levels of in-role and extra-role performance. Meta-analyses of the key antecedents and the consequences of employee engagement have confirmed this proposition (e.g., Christian et al., 2011; Halbesleben, 2010).

Employees with higher levels of in-role job performance contribute directly to organizational goal accomplishment, because the work activities "bear a direct relation to the organization's technical core, either by executing its technical processes or by maintaining and servicing its technical requirements"(Motowidlo & Van Scotter, 1994, p. 476). By contrast, extra-role performance is more discretionary in the sense that the employee behaviours do not contribute through the core technical processes (Motowidlo et al., 1997), but support the broader social and psychological context of an organization. Examples are helping and cooperating with co-workers and volunteering to carry out task activities (Borman & Motowidlo, 1997) that are not formally part of the job (also known as specific forms of organizational citizenship behaviour; Organ, 1997).

Engaged employees perform better than non-engaged employees, because they experience positive emotions (e.g., joy, happiness) (Bakker & Demerouti, 2008) and perceive good health which enables to perform well (Schaufeli & Bakker, 2004). In addition, engaged employees are able to mobilise new personal and job resources (Xanthopoulou et al., 2009) and transfer their engagement to others in the work team (Barsade, 2002).

Previous research has found mediating roles of employee engagement in resource – performance relationships (Salanova & Schaufeli, 2008; Sulea et al., 2012; Tims et al., 2013; Torrente et al., 2012b). For example, Torrente et al. (2012b) confirmed that the influence of team social resources on supervisor's rating of team performance was mediated by shared employee engagement.

Building on the mediating role of employee engagement established in previous studies, we expect that shared individual PCF increases team in-role performance and team extra-role behaviours, firstly because employees in teams share higher levels of

engagement, and secondly these higher levels are observed by their supervisors (i.e., team engagement).

H2: Shared (aggregated) perceptions of psychological contract fulfilment are indirectly and positively related to team in-role performance, sequentially mediated through first shared (aggregated) employee engagement and then team engagement.

H3: Shared (aggregated) perceptions of psychological contract fulfilment are indirectly and positively related to team OCB, sequentially mediated through first shared (aggregated) employee engagement and then team engagement.

The relationships between the team level constructs in this study are depicted in Figure 3.1.

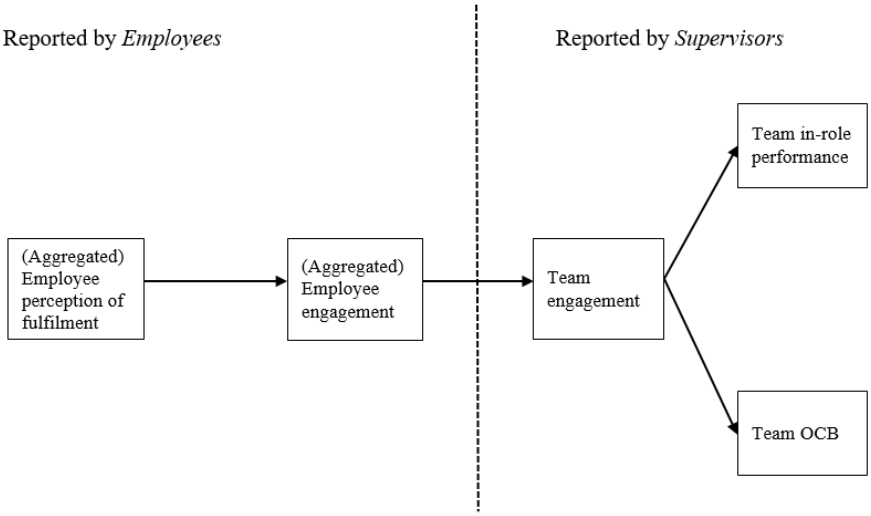

Figure 3.1: Conceptual model

Method

Population and sample

The data of this study were collected by student researchers following a strict protocol. Employees and team managers in the Netherlands completed questionnaires in Dutch and English language about their working environment and the relationships with experiences and perceptions. The English scales in the questionnaires were translated

into Dutch and translated back into English by certified and independent translators (Brislin, 1980). In total 567 employees and 117 supervisors responded to the surveys. Employees who could not be matched to the managers in the manager survey or vice versa or had missing values on all research variables were excluded from analysis. The final sample size consisted of 512 employees working in one of 113 work teams. Team size ranged from 2 to 9 members. 20.5% of the employees in the sample are employed in teams of four members, 61.7% in teams of five members. Most employees in the sample were female (55.8%). Mean age of the employees was 37 years (SD = 13.2), their managers 43 years (SD = 11.3). Employees had on average 9.3 years (SD = 10) of working experience in their organization. The mean organizational tenure of the managers in the sample was 11.9 years (SD = 11.4). 32.4% of the managers worked in large organizations (> 1000 employees), 14.3% in SME's (< 25 employees). The largest group of managers are employed in commercial organizations (21.7%). The remainder of the manager group was employed as staff in a diverse range of sectors (e.g., health care 11.1%, professional services 10.5%).

Measures

Employee perception of fulfilment by the team. This construct was measured with a horizontal psychological contract (HPC) scale developed by Schreuder et al. (2017). In this scale, perceptions of mutual obligations (i.e., mutuality) and perceptions of the degree of balance in the fulfilment of those obligations (i.e., reciprocity) are separated to determine their relative effect. (See for both concepts also Schalk & de Ruiter, 2019).

The HPC scale comprises 15-items like "… the team would take your interests into account when making decisions." or "… the team would help you to get your job done". Answer categories ranged from 0 (No, not at all) to 5 (Yes, but I received much more than promised). In this study, we used only the reciprocity variable of this scale. The results showed good internal consistency (.961).

To test whether aggregation was justified (Chan, 1998), we calculated the interrater reliability (i.e., ICCs) and the within-team interrater agreement statistics of the individual level items of this scale. The intraclass correlation indices ICC(1) and ICC(2) of the perceived contract fulfilment variable are .14 and .43 respectively ($F = 1.76$, $p < .01$).

To estimate within-team interrater agreement (James et al., 1993), we used the multi-item $r_{wg(J)}$ index suggested by James et al. (1984), showing strong interrater agreement (.74) in the measurements of employee perception of fulfilment.

Employee engagement. In the present study, we used the core dimensions (Salanova & Schaufeli, 2008) vigour and dedication as indicators of engagement. The absorption dimension of engagement is not measured due to multicollinearity issues (see Schaufeli et al., 2002) and the evidence that absorption is a consequence of the other two dimensions (Salanova & Schaufeli, 2008).

Vigour and dedication are both measured with three items in a shortened version of the Utrecht Work Engagement Scale (UWES). Schaufeli et al. (2006) demonstrated the factorial validity, the good internal consistency and test-retest reliability of the shortened UWES scale in 10 different countries. Items of the UWES scale are, for example, "At my work, I feel bursting with energy." and "My job inspires me." The items of the scale are scored on a 7-point frequency rating scale: never, almost never (a few times a year or less), rarely (once a month or less), sometimes (a few times a month), often (once a week), very often (a few times a week), always (every day).

With confirmatory factor analysis (CFA), we examined the fit of a two-factor model to the data, in which the items loaded on the dimensions vigour and dedication. The goodness-of-fit of this model was good: CFI = .993, RMSEA = .066, SRMR = .0151. However, the goodness-of fit of the one factor model was slightly better: CFI = .996, RMSEA = .054, SRMR = .0137, which differs significantly from the two-factor model: $\Delta\chi^2 = 7, \Delta df = 1, p < .01$. The internal consistency of the scale is .91.

To justify aggregation of the employee engagement data to the team level, we calculated the interrater reliability and the within-team interrater agreement statistics. The mean $r_{wg(j)}$ for employee engagement was .93, which indicates very strong interrater agreement. Furthermore, the intraclass correlation indices of ICC(1) and ICC(2) was .28 and .64 respectively ($F = 2.80$, $p < .01$).

Team engagement. Engagement by the team was assessed by the team managers. As indicators, we used the shortened UWES work engagement scale, but we changed the reference from "I" to "My team". For a similar approach, see Bishop et al. (2000) and Bishop and Scott (2000). Example items are "People in my team feel strong and vigorous" and "People in my workgroup feel inspired in their job". Answer categories ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). CFA demonstrated that the one factor structure of team engagement showed the best fit to the data when compared to the two-factor vigour-dedication model: CFI = .973, RMSEA = .122, SRMR = .028. The team engagement scale in this study has an acceptable internal consistency (.86).

Team in-role performance. The team managers assessed the in-role performance of their teams. As indicators of this four-item construct, we used an adapted version of the individual focused items of Williams and Anderson (1991). Instructions were modified and the referent of the measures was changed from individual to team members/ the work unit. Answer categories ranged from 1 (*never*) to 7 (*always*). Example items are "Achieved objectives of the job" and "Met criteria for performance". The internal consistency of the scale was good (.87).

Team extra-role behaviour. Team managers assessed extra-role behaviour of their team/ work unit with an adapted version of the individual focused items of Lee and Allen (2002). In the original scale, Lee and Allen (2002) conceptualized extra-role behaviour in terms of the intended target or beneficiary of the citizenship behaviour. They distinguished two types of OCB, as earlier suggested by Williams and Anderson (1991) and Organ (1997): citizen behaviours directly intended to benefit the organization (OCB-O), and those directed to individuals (OCB-I). They argued that OCB-O is likely a direct function of employee's beliefs about their work characteristics, while OCB-I, primarily helping individuals at work, reflects a "natural expression of employee's affect at work".

To assess team extra-role behaviour, instructions of the original scale were modified and the referent of the measures was changed from individual to team members/the work unit. For a similar approach, see Bommer, Dierdorff and Rubin (2007). For example, we asked team managers how often the past month team members "helped others who had been absent" (i.e., OCB-I) or "demonstrated concern about the image of the team" (i.e., OCB-O). Answer categories ranged from 1 (*never*) to 7 (*always*). Confirmatory factor analysis of the dataset (n = 512) clearly showed that the two-factor OCB-I/ OCB-O model of team extra-role behaviour is preferred to the one-factor OCB model and hence confirmed the empirical distinction between OCB-I and OCB-O in team-member exchanges. Indeed, the goodness-of-fit of the two-factor model was good: CFI = .990, RMSEA = .062, SRMR = .0239. Reliabilities of the 3-item OCB-I and 3-item OCB-O subscales are .80 and .76 respectively.

Control variables

The number of employees in the team is one of the factors shaping perceptions of contract fulfilment and engagement in teams. With larger team size, the individual participation and the opportunities for each member to interact and communicate tend to be lower. This creates a work environment where sharing of perceptions between team members becomes much more difficult. Moreover, larger team sizes decrease the

possibilities of managers to effectively communicate and shape member's perceptions of the organizational obligations to the team.

Measurement model

The measurement model fit relatively well with the observed data as seen in the model fit statistics (See for cutoff criteria in covariance structure analysis Hu & Bentler, 1999): cmin/df = 1.523, CFI = .920, RMSEA = .068, SRMR = .0617. All measures exhibited strong reliability and good convergent and discriminant validity (see Table 3.1 below).

Table 3.1: Evaluation of team-level constructs

Construct	CR	AVE	MSV
(Aggregated) employee perceptions of fulfilment	.965	.700	.114
(Aggregated) employee engagement	.939	.755	.142
Team engagement	.879	.547	.453
Team in-role performance	.880	.649	.381
Team OCB-I	.797	.567	.526
Team OCB-O	.772	.532	.526

The self-reporting of the psychological contract perceptions and the engagement scales in this study might have caused (common) method bias (Podsakoff et al., 2003, 2012). Method bias can be a problem through its effects on the path coefficients in the mediation models. Therefore, we added a common latent factor (CLF) to the measurement model, which should capture the shared variance. To detect method bias, a CLF unconstrained model was compared with a CLF fully constrained model. A significant chi-square difference test between both models indicated that common method bias may have harmful effects in the mediation analysis: $\Delta X^2 = 106.13, \Delta df = 33, p < .001$. To control for method bias in this study, data from multiple sources *and* bias-corrected factor scores are used in the mediation models.

Results

Table 3.2 below presents the means, standard deviations, correlations and alpha coefficients for all study variables.

On average, employees perceive that their work teams fulfil their promises (i.e., 0.17 on a scale ranging from -2 to +2). The dispersion (SD = .58) in these perceptions is relatively large. That means that there is a considerable amount of variation between employees in perceived contract fulfilment.

Table 3.2: Descriptive statistics, correlations and internal consistencies.

	M	SD	1	2	3	4	5	6
(Aggregated) Employee perceptions of fulfilment	.17	.58	(.961)	.389**	.210*	.176	.049	.111
(Aggregated) Employee engagement	5.04	.99		(.911)	.328**	.204*	.118	.272**
Team engagement	3.76	.56			(.862)	.512**	.296**	.472**
Team in-role performance	5.20	.69				(.870)	.438**	.449**
Team OCB-I	5.23	.91					(.802)	.465**
Team OCB-O	5.00	.98						(.765)

Notes: Correlations are presented at the team level (above the diagonal). Between brackets on the diagonal: alpha coefficients.

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

The observed correlation between employee engagement and PCF is significant at the 1% level. The team variables, all rated by the team supervisors, show moderate correlations largely in accordance with our conceptual model. Not expected is the significant correlation between the two types of citizen behaviours and in-role performance (for OCB-O and OCB-I, $r = .449$ and .438 respectively).

As can be seen from Table 3.2, the two types of citizen behaviours are linked to each other in a moderate, but significant correlation ($r = .465$, $p < .01$). It reflects that both types are indeed parts of team OCB.

For hypothesis testing, we converted the measurement model in a structural model with team size as a control variable. The structural model fits the data quite well: cmin/df = 1.588, CFI = .897, RMSEA = .072 and SRMR = .0740. In Figure 3.2, the direct effects of the model are depicted.

All regression coefficients in the model are significant at p <.001, while controlling for team size. Team size was insignificant in the model, except for the relationships with shared (aggregated) employee engagement and team OCB-O. The standardised regression coefficient for shared (aggregated) employee engagement was negative significant (β = -.190), as expected, and positive significant for team OCB-O (β = .117).

In hypothesis 1, we expected a positive relationship between (aggregated) employee perception of contract fulfilment by the team and (aggregated) employee engagement. We conclude that the hypothesis 1 is supported: (β = .36, $p < .001$). It is interesting

to note that shared (aggregated) psychological contract perceptions explain only a moderate part (17.7%) of the variance in shared (aggregated) employee engagement. Shared (aggregated) employee engagement accounts for only 14.1% of the variance in supervisor-rated team engagement. That means that in the perception of team managers, engagement in their work teams is explained by other factors (approximately 85.9%) outside the model.

We predicted mediation effects of first, shared (aggregated) employee engagement and then supervisor-rated team engagement in the relationships with team in-role and team extra-role behaviours. Hypothesis 2 stated that engagement mediates the relationship between shared psychological contract perceptions and team in-role performance. Hypothesis 3 proposed an equivalent mediation effect in the relationship between psychological contract perceptions shared in work teams and team OCB. CFA of the team OCB construct has revealed that the two-factor model of extra-role behaviour is to preferred above the one-factor model. Thus, for testing hypothesis 3 mediation analysis must be repeated for every type of extra-role behaviour: team OCB-I and team OCB-O.

In Table 3.3, the estimates of the direct and indirect effects are shown. All the direct effects and indirect effects are insignificant, except the higher order indirect effects (i.e., with M_1 *and* M_2 as mediators).

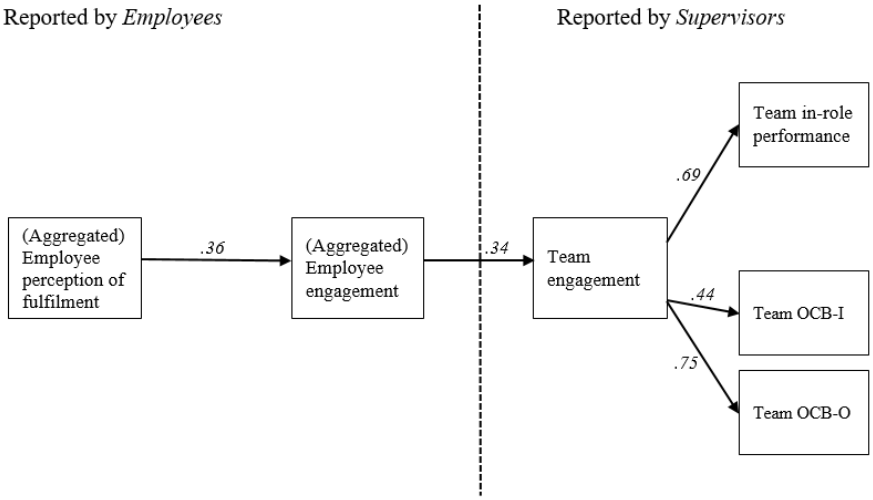

Figure 3.2: The motivational process of employee's perception of team fulfilment with standardized regression coefficients.

Table 3.3: Estimates and p-values of direct and indirect effects in the mediation models.

Mediation model hypothesis 2 **X = (aggregated) perceptions of fulfilment, M_1 = (aggregated) employee engagement, M_2 = team engagement, Y = team in-role performance**	**Estimate**	**p-value of effect**	**Significant?**
Direct effect of X on Y	-.010	.886	no
Indirect effect of X on Y through M_1	.004	.838	no
Indirect effect of X on Y through M_2	-.029	.640	no
Indirect effect of X on Y through M_1 and M_2	.071	.001	yes
Mediation model hypothesis 3: *team OCB-I* X = (aggregated) perceptions of fulfilment, M_1 = (aggregated) employee engagement, M_2 = team engagement, Y = team OCB-I			
Direct effect of X on Y	-.044	.389	no
Indirect effect of X on Y through M_1	-.008	.741	no
Indirect effect of X on Y through M_2	-.027	.604	no
Indirect effect of X on Y through M_1 and M_2	.065	.001	yes
Mediation model hypothesis 3: *team OCB-O* X = (aggregated) perceptions of fulfilment, M_1 = (aggregated) employee engagement, M_2 = team engagement, Y = team OCB-O			
Direct effect of X on Y	.052	.175	no
Indirect effect of X on Y through M_1	.002	.903	no
Indirect effect of X on Y through M_2	-.037	.645	no
Indirect effect of X on Y through M_1 and M_2	.091	.001	yes

Note All constructs are measured at the team level and controlled for team size. The X and M_1 variables in the mediation models are estimated by aggregation of individual level scores in accordance with a direct consensus composition model (see Chan, 1998, p. 237). Indirect effects in de mediation models are estimated with bootstrapping.

Therefore, it can be concluded that the relationships between shared (aggregated) psychological contract perceptions in work teams and team in-role performance and team extra-role behaviours are fully and sequentially mediated by shared employee engagement and team engagement. Thus, mediation hypotheses 2 and 3 are supported by the data.

Discussion

Implications for theory

This study has addressed the role of work teams in perceptions of fulfilment of psychological contracts. The mediation models have confirmed that psychological

contract beliefs in co-worker relationships may act as motivational drivers of team performance and behaviours.

The study highlights the importance of psychological contract perceptions at the team level in explaining why some teams perform better than others. Team perceptions of contract fulfilment by co-workers in the team affect team performance indirectly through vigour and dedication, as observed by supervisors. This implies that fulfilling the mutual obligations in a team is a key factor that drives engagement, and consequently fosters good performance.

However, there are other factors that can play a role. In the mediation models, psychological contract perceptions explain only 17.7% of the variance in engagement. Other factors that could contribute to engagement in teams are according to Kahn (1990) perceived psychological meaningfulness, safety and availability (of resources) in work contexts. These factors can be considered as building blocks of employee-employer psychological contracts, but also of employee - co-worker psychological contracts. For example, when managers delegate tasks to their teams that require relatively high-level skills and provide autonomy to the team, it is likely that team workers experience their work as more meaningful (Hackman, 1987). On top of that, providing work roles carrying status or influence to the team will enhance meaningfulness further. In addition, supportive, resilient and clarifying management styles of team supervisors enhance psychological safety (Edmondson, 1999). Challenging, but acceptable, performance objectives and well-designed reward systems may increase the psychological and emotional energy of workers in the team. Thus, job, task and role characteristics, management styles, performance objectives, reward systems all contribute to employee engagement, next to psychological contract fulfilment.

Implications for practice

Since psychological contract fulfilment in the team enhances engagement and performance, supervisors should be aware that the fulfilment of mutual obligations is an important factor that can explain differences between teams. Supervisors can monitor how their subordinates fulfil the mutual obligations to other team members as part of performance evaluation procedures. Supervisors can set an example for the team members by trying to make sure that they themselves fulfil their obligations towards the team members.

Although engaged employees contribute more to the team, it should be noted that putting more effort in work by employees also has a downside. Engaged and attached employees are motivated to mobilise (e.g., ask co-workers for help) and create new

resources (e.g., increased personal competences). This may lead to a higher level and greater number of obligations, which might be more difficult to fulfil. Following COR theory, the increased effort and contributions to the team need to be balanced (see also Ruokolainen et al., 2018).

The higher level and number of obligations to the team, co-workers or employer, can for example be compensated by providing more and better fringe benefits or opportunities for (career) development. In addition, to prevent psychological contract breach and to sustain employee engagement, accommodative HRM practices (Bal, Kooij, et al., 2013) can be implemented. Developmental HRM (e.g., training, job enrichment, job rotation) can be used to provide more resources or another mix of resources to increase vigour and dedication in the team. For example, training programs in the team that fulfils employee's needs will have a positive effect. Furthermore, supervisors can use incentive and reward systems to reward employees in the team who perform well and put much effort in their work. Using these HR practices will also be beneficial to develop changes in team psychological contracts from more transactional to more relational (Rousseau & McLean Parks, 1993).

Limitations

The sampling design of this study has a number of limitations that should be considered in interpreting the results. Although data are used from multiple sources; the design is largely cross-sectional. This implies that it is very difficult to conclude which causal sequences are plausible and which are not (Taris & Kompier, 2006). In other words, the design did not allow us to reach decisive conclusions about the causation between the variables. A longitudinal design could overcome this limitation and uncover the *causal* paths between psychological contract perceptions in work teams and work outcomes.

Future research

This study provides evidence for a relation between team perceptions of psychological contract fulfilment by co-workers and team performance. To test direct and indirect effects in this relationship more strongly, future research could employ a longitudinal design. Time must elapse for psychological contract perceptions to have an effect on engagement or vice versa.

Adding perceptions of *employee-employer* psychological contracts and HR practices to the mediation models will probably help to explain more variance in team performance and behaviours. The use of multilevel methodology is recommended in future research to explore more in depth the cross-level relationships, with variables influencing and promoting psychological contract fulfilment and employee engagement.

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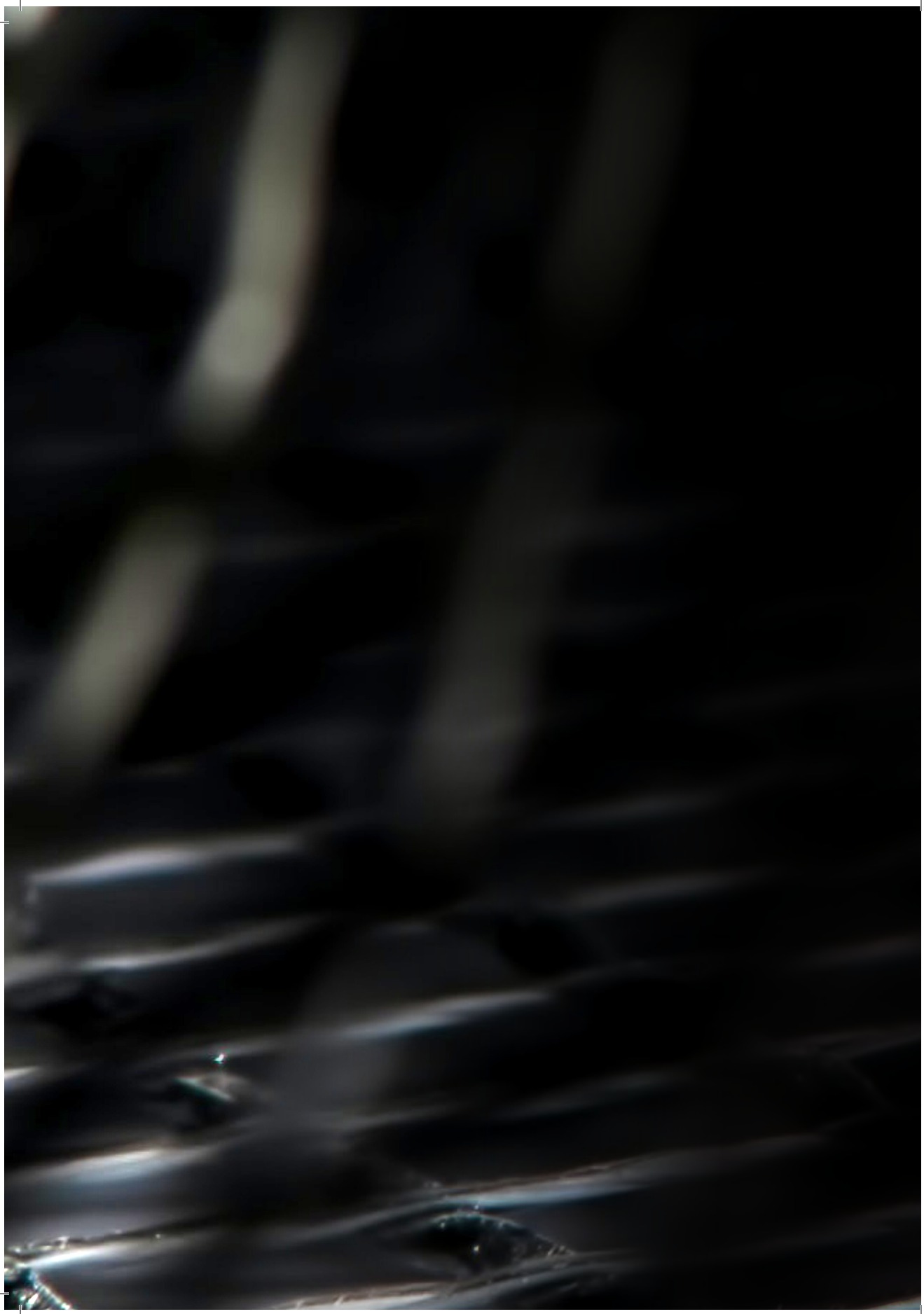

CHAPTER 4

Goal congruence in teams and performance: the role of (shared) psychological contract fulfilment[4]

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Abstract

This study examines the motivating effects of goal congruence on outcomes in teams. Building on psychological contract theory and theories of person-environment fit, we proposed at the team level of analysis a mediating role of psychological contract fulfilment and moderating effects of task interdependence and team identification. The results indicate partial mediation of shared psychological contract fulfilment in the goal congruence – team performance relationships and a significant moderation effect of team identification with team alignment in learning goal orientations.

Keywords: Psychological Contracts, Team Performance, Goal Congruence, Goal orientation.

Introduction

Work teams represent the core building blocks of many organizations (Rousseau & Aubé, 2010). With increasing global competition, consolidation as well as innovation is needed for organizations. That requires diverse skills, expertise and experience (Kozlowski & Bell, 2013), accompanied with rapid, flexible and adaptive responses and a great amount of creativity. Teams in organizations are key actors that can enable these responses.

Teams in organizations, like other collectives, include at least two individuals, who share one or more common goals, interact socially and are interdependent to a certain degree. They differ from other collectives, such as small groups or social groups, in that they are embedded in an organizational context which "constrains the team, sets boundaries and influences exchanges with other units in the broader entity" (Kozlowski & Bell, 2003). Teams come in many different configurations and can be tasked with different types of functions (Mathieu et al., 2008). The configuration and type of a team reflects the different demands a team faces. Some teams function more effectively than others, and the 'why' and 'when' of team effectiveness has been subject of study. In fact, the increasing prevalence of teams in organizations (Balkundi & Harrison, 2006) has been paralleled by an expansion of theories addressing team effectiveness, and an exploding number of empirical studies focused on work teams. Researchers have conducted various meta-analyses of the antecedents and mediational factors of team effectiveness. These meta-analyses find support for the effects of factors such as teamwork processes (LePine et al., 2008), task- and relationship conflict (De Dreu & Weingart, 2003), shared leadership (Wang et al., 2014), team-efficacy (Gully et al., 2002), team diversity (Bell et al., 2011; Horwitz & Horwitz, 2007), group cohesion (Beal et al., 2003; Gully et al., 1995), and team trust (Breuer et al., 2016).

Despite the growing body of evidence on antecedents and intervening mediating factors of team effectiveness, understanding of a particular set of antecedents is limited. Although perceptions of agreement and fulfilment of psychological contracts in the work team can have important implications for team effectiveness because they have the potential to enhance motivation and engagement (Schaufeli & Bakker, 2004) of team members, research on psychological contracts in teams is scarce. This study will examine how perceptions of shared fulfilment of contracts in work teams affect team extra-role behaviours and performance.

In contract literature, a psychological contract refers to "individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (Rousseau, 1989, p. 123). Research has shown that perceptions of

fulfilment of contract obligations affects important work-related outcomes, such as in-role performance (Turnley et al., 2003; Zhao et al., 2007), citizenship behaviours (Coyle-Shapiro, 2002), commitment (Coyle-Shapiro & Kessler, 2000; Lester et al., 2002), trust (Bal et al., 2008; Robinson, 1996), and turnover intentions (Robinson & Rousseau, 1994; Turnley & Feldman, 1999). Although the psychological contract fulfilment (PCF) literature is extensive (Rousseau, 2011), it is mostly focussed on organization-employee relationships. Here, we argue that PCF is not limited to this individual-level conceptualization. The prevalence of teamwork in organizations has made the team as a social context much more important for the development and fulfilment of psychological contracts. In today's workplace, employee's evaluations of PCF are likely to be more influenced by social referents (Ho & Levesque, 2005), particularly when employees share psychological contracts (Ho, 2005). Rousseau (1995) notes that employees who share psychological contracts can experience contract changes (e.g., violation, breach) as a result of other organizational member's experiences.

Thus, the contribution of this study to the psychological contract literature is twofold. First, we explore the formation of psychological contracts and the evaluation in team – member relationships. That is, when employees perceive that their work team fulfils its obligations and delivers what is promised, they feel obliged as a kind of repayment to engage themselves more in their work and perform better. Second, we study what the effects of shared PCF are at the team level. We maintain that psychological contract perceptions are not only individual, but through social interactions also shared in teams. Both individual and team level perceptions contribute to team performance.

Goal orientation – individual goal preference in achievement situations – received a great deal of attention in organizational research (Payne et al., 2007). It is rarely considered as an antecedent of psychological contract fulfilment, however. We argue that goal orientation is important to consider since research suggests that goal orientation can be a powerful motivator for both employees and teams (O'Leary-Kelly et al., 1994). For example, although a work team can have a particular goal, members of the team may focus on different aspects of this goal or even pursue their own goals. Such differences in goals may affect member's interactions with other members, as well as their psychological (team)contracts and fulfilment perceptions. Behaviours and performance at the levels of the individual and the team are affected. Thus, to understand how the total of goal orientations within teams affects member's performance, alignment in goal orientations (i.e. goal congruence) as one of the team-level predictors of (shared) fulfilment perceptions in teams should be considered.

The relationship between goal congruence and psychological contract fulfilment by the team is likely to be strengthened by team identification (Tanghe et al., 2010), and task interdependency (Mueller, 2012). When members identify with their team, they define themselves in terms of team membership. This identification may lead to conform more to norms, attitudes and values of the team, a sense of shared social identity (Ashforth & Mael, 1989). In teams with high task interdependency, members depend on each other for information, materials and reciprocal inputs (Stewart & Barrick, 2000). They must cooperate and work interactively to complete tasks. The intense interaction created by task interdependence results in a stronger sharing of perceptions. Therefore, team identification and task interdependence will influence the relationship between goal congruence and psychological contract fulfilment.

In the conceptual model depicted in Figure 4.1 below, we propose that (shared) fulfilment perceptions in teams is a key component in the process by which teams perform. Psychological contracts develop as a deliberate goal-oriented process (Shore & Tetrick, 1994), in which employees attempt to establish implicit agreements with their work teams which will address a variety of work objectives. Parts of these psychological contracts will be shared in the team.

Testing this model will provide information about the relative importance of work design interventions or managerial practices targeted at the team as a whole, compared to the individuals who comprise the team.

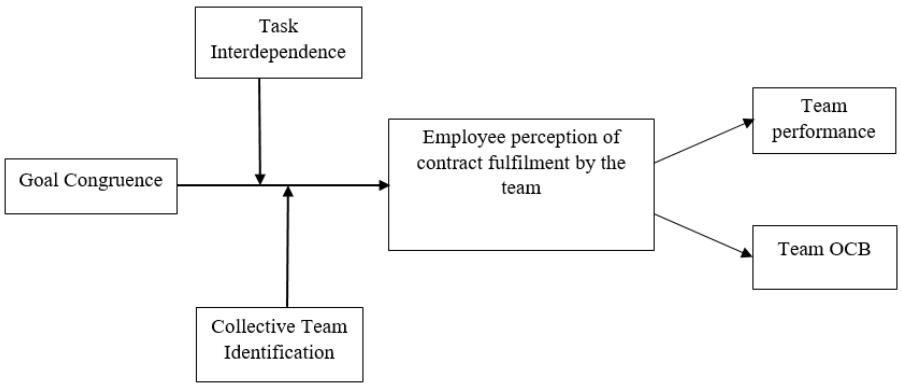

Figure 4.1: Research model.

Theoretical Framework

Goal orientations are defined by Dweck (1986) as dispositions toward developing or demonstrating ability in achievement situations. According to Nicholls (1975, 1984), goal orientations must be defined in terms of achievement behaviour in which individuals select tasks to develop or demonstrate high ability (success) or avoid low ability (failure). There is some debate in organizational research why individuals have different goal orientations. For example, Nicholls (1984) attributed goal orientations to individual's own perceived mastery, understanding or knowledge versus perceived ability with reference to a normative reference group. Dweck (1986) and colleagues, however, attributed goal orientations to theories of intelligence.

At least two goal orientations exist: "performance orientations" focus on gaining positive judgements and avoiding negative judgements of competence (i.e., demonstrating competence, see Pieterse, 2009), and "learning orientations" are concerned with increasing competence (Dweck & Leggett, 1988). Studies of person-environment fit (P-E fit) have shown that similarity in psychological characteristics of employees, including goal congruence (Vancouver & Schmitt, 1991), are associated with improved work outcomes, such as job satisfaction and organizational commitment (Kristof-Brown et al., 2005), higher performance and lower turnover intentions (Kristof-Brown & Stevens, 2001). These relationships are in line with Byrne's "attraction paradigm" (Byrne, 1969, 1997); team members are attracted to, and like, other members who are similar to themselves in values and beliefs. They do so, because the relationships with similar selves are believed to be more rewarding and supportive (Cable & Edwards, 2004). Team members who share similar values and goals, find it easier to work together (Greguras & Diefendorff, 2009), to interact and communicate with the co-workers in the team and develop high-quality relationships (which promotes affective sharing). Moreover, sharing similar values and goals in teams increases predictability of how others in the team will act (Adkins et al., 1996), how events will unfold (Edwards & Cable, 2009), and promotes trust in relationships.

Sharing similar values in teams will reduce uncertainty, stimulus overload (Kalliath et al., 1999), and other negative features of work interactions. At the same time members experience less role ambiguity and conflict (Meglino et al., 1989), and are therefore more satisfied and committed to the team (Vancouver et al., 1994). Thus, similarity in goal orientations of team members is expected to have an effect beyond those of employee's own goals. Vancouver and Schmitt (1991, p. 339) referred to this similarity or alignment in goal orientation as *goal congruence*: "the agreement on group-level goals of one member of the group with all the other members of his or her group". More specifically, when employees perceive that the goal orientations of the members

in their team are congruent with their own, they think that the team will better fulfil perceived obligations with regards to support and the attainment of personal goals. The employee reciprocates with enhanced contributions to the team. In contrast, perceived discrepancies in self-team performance orientations will lead to imbalances in psychological contracts with the team with negative consequences for employee contributions.

In teams, the development of similar psychological contracts and shared perceptions of psychological contract fulfilment is expected to occur. The presence of social referents (Ho & Levesque, 2005; Wong, 2008) in the work team and social influence processes (Ho, 2005) affect how team members interpret the fulfilment of their psychological contracts. The continuously strengthening or weakening of member's initial perceptions may result in a more homogeneous set of perceptions in teams. Thus, a "shared individual PCF" (Laulié & Tekleab, 2016) emerges from member's perceptions. Shared individual PCF is defined in this study as "the convergence of team members' perception of the degree to which their team fulfils individual psychological contracts".

As depicted in Figure 4.1, we propose in the next team-level hypothesis a relationship between perceived similarity in goal orientations and shared individual PCF.

H1: The greater the congruence between team member's goal orientations, the higher the shared employee perceptions of psychological contract fulfilment.

Compliant with social exchange theory (Blau, 1964), teams with high-shared fulfilment will try to balance the positive exchanges with a shared desire to perform effectively, which increases team performance. The positive environment of (shared) psychological contract fulfilment motivates team members to contribute more to their team, displaying extra role behaviour. Other members in the team are encouraged to imitate those behaviours, creating a shared (i.e., team level) extra role behaviour. Therefore, we hypothesize at the team-level of analysis:

H2a: *Shared* employee perception of fulfilment by the team is positively related to team performance.

H2b: *Shared* employee perception of fulfilment by the team is positively related to team extra-role behaviours (i.e. team OCB).

Following from the relationships as described above, we propose a mediation effect of shared PCF between goal congruence and team performance and OCB. Perceived similarity in goal orientations enhances perceived fulfilment of obligations by the team. Members reciprocate by increasing performance and extra-role behaviours. Thus, we hypothesize:

H3a: *Shared* employee perceptions of fulfilment mediates the relationship between goal congruence and team performance.

H3b: *Shared* employee perceptions of fulfilment mediates the relationship between goal congruence and team OCB.

Factors that promote and strengthen sharing psychological contract beliefs in teams include team identification (Tanghe et al., 2010), and task interdependency (Mueller, 2012).

Task interdependency is one of the important structural variables that influences team performance (Liden et al., 1997). In addition, it has been pointed out that task interdependence often indirectly influences performance by moderating the effects of other variables on performance (Langfred, 2005). Task interdependence is defined in this study as the degree to which team members must rely on one another to perform their tasks effectively given the design of their jobs (Saavedra et al., 1993).

At the team level, we expect that the motivational effects of goal congruence depend on the level of task interdependence in the team. In teams that perform highly interdependent tasks, members have to work together (Van Der Vegt et al., 2003) and need each other's information, materials, expertise (Van Der Vegt et al., 2001) and support to achieve common goals. As each team member's contribution is required, high-quality interpersonal relationships based on trust, improved communication and increased ability to predict each other's behaviour enable each member to perform well in the attainment of shared goals. In less interdependent teams, on the other hand, members work more independently on their tasks. In such a situation, interaction with congruent team members may interfere with individual performance (Adkins et al., 1996), as it is time-consuming and ineffective to reach team-consensus on decisions. Excessive time may be spent in coordination activities team members feel are not necessary (Liden et al., 1997). Team members pursue their personal interests (Stewart & Barrick, 2000), and may benefit from cooperation in the team without contributing in return (Van Der Vegt et al., 2003).

In highly interdependent teams the effects of perceived similarity in goal orientations are expected to be stronger than in less interdependent teams, because in highly interdependent teams' members need others to accomplish personal goals. Similarity is then perceived as increased performance of the team in personal goal attainment. Perceived obligations of the team in the psychological contract are met and levels of perceived psychological contract fulfilment rise. These perceptions of fulfilment are subsequently shared in the team. Therefore, we hypothesize:

H4: An interaction effect between goal congruence and task interdependence is expected, such that teams with perceived similarity in goal orientations and high levels of task interdependence are likely to have higher levels of shared employee perceptions of psychological contract fulfilment than teams with low levels of task interdependence.

Regarding team identification, when members identify with their team, they define themselves in terms of team membership. This identification may lead to conform more to norms, attitudes and values of the team. It is assumed that identification depends on a sense of shared social identity (Ashforth & Mael, 1989). That is, identification with a team is much more easily when members belonging to the same team do share similar perceptions of team identity (Van Knippenberg & Van Schie, 2000). Since we are interested in team identification as a motivational force that can enable high-quality relationships and interactions in teams, we focus on the emotional aspects of team identification in this study. Following van der Vegt & Bunderson (2005, p. 533), we define team identification as "the emotional significance that members of a given group attach to their membership in that group".

We argue that team identification strengthens the motivational effects of perceived similarity in goal orientation on perceived psychological contract fulfilment. In teams with high levels of team identification, employees are committed to their work team and its goals rather than (or in addition to) to their own goals. They perceive that their team is able to fulfil obligations to its members to a higher degree, which will be reciprocated by expending more effort on behalf of the team, offering more support and loyalty. This feeling will more likely be shared as employees who are emotionally attached to the work team, are more motivated to pick up affective signals (Tanghe et al., 2010) of others in the team and are more attentive to their behaviours, feelings and attitudes. Thus, we hypothesize:

H5: An interaction effect between goal congruence and team identification is expected, such that teams with perceived similarity in goal orientations and high levels of team identification are likely to have higher levels of shared employee perceptions of psychological contract fulfilment than teams with low levels of team identification.

Method

Population and sample

The data of this study were collected by student researchers following a strict protocol. In Spring 2018, employees and their team managers completed questionnaires on their work-related perceptions. The sample consists of 544 employees working in one of 127 work teams. Team size ranged from 3 to 11 members.

Most employees in the sample were female (57.6%) and had at least a bachelor degree (61.4%). They worked on average almost five years in the team with a few outliers of ten years or more. The majority had a full-time job (53.7%) on a permanent basis (70.2%). The mean age of the employees was 35 years (SD = 12.9), the manager of their work team 42 years (SD = 10.6). The mean organizational tenure of the managers in the sample was 11.3 years, with large differences (SD = 9.3). 39.9% of the managers worked in large organizations (> 1.000 employees), 12.9% in SME's (< 25 employees). 17% of the managers in the sample are employed in commercial organizations (i.e., whole sale, retail, supermarket). The rest of the manager group worked as staff in a diverse range of sectors (e.g. industry 15.0%, public administration 13.7%, corporate services 11.6%).

Measures

To reduce common method variance (Podsakoff et al., 2003), we collected data from multiple sources, namely the team members and their immediate supervisors. The team members provided data regarding individual level attitudes and behaviours, whereas the supervisors provided data concerning task interdependence and team level performance.

Employee perception of fulfilment by the team. We measured perception of fulfilment by the team with the Schreuder et al. (2017) 15-item scale. Example items are "… the team would take your interests into account when making decisions." or "… the team would help you to get your job done". Reciprocity in psychological contracts is rated from 0 (*No, not at all*) to 5 (*Yes, but I received much more than promised*). The scale measures psychological contracts at the individual level of analysis, showing good internal consistency (α =.913). Individual ratings were aggregated to the team level. To

test whether such aggregation was justified (Chan, 1998), we calculated a within-team interrater agreement statistic, $r_{wg(J)}$ (James et al., 1993), and intraclass correlation indices ICC(1) and ICC(2) (Bartko, 1976). The mean $r_{wg(J)}$ for perception of fulfilment by the team, using a uniform null distribution, was .96 (SD =.13) indicating strong agreement (LeBreton & Senter, 2008). ICC(1) and ICC(2) were calculated from a one-way random effects ANOVA (McGraw & Wong, 1996). The results showed a significant F-statistic ($F = 1.75$, $p < .001$), an acceptable ICC(1) value (.16) and a moderate ICC(2) value (.43).

Goal Congruence. To assess perceived similarity in goal orientations, we used the van de Walle (1997) 13-items goal orientation scale. The van de Walle scale identifies three dimensions (i.e., learning, prove and avoid) in goal orientation, domain specific to work settings. Example items are "I enjoy challenging and difficult tasks at work where I'll learn new skills" (learning), "I am concerned with showing that I can perform better than my co-workers" (prove) and "I prefer to avoid situations at work where I might perform poorly" (avoid). The items are rated on a Likert-type scale with answer categories ranged from 1 (*totally disagree*) to 5 (*totally agree*).

Since previous research found that the standard deviation in goal orientations was a stronger determinant of group processes and performance than mean levels (Pieterse, 2009; Pieterse et al., 2011) and to incorporate team composition (LePine, 2005) in the analysis, perceived similarity was assessed as the standard deviation in the goal orientations of the team.

Three competing a priori models were analysed. The first model measures goal congruence with three-correlated factors of goal orientation (learning, prove and avoid). The second model was a two-correlated factor model with a 5-item learning factor and a performance factor in which the 4 prove and 4 avoid items are combined. In the third model we tested the possibility that the 13 items were the result of a general goal congruence factor. The second model showed a significantly better fit than the two other models: Model 3 factors versus 2: $\Delta\chi^2 = 54.234, \Delta df = 11, p < .01$; Model 2 factors versus 1: $\Delta\chi^2 = 5.174, \Delta df = 2, p < .01$ Cronbach's alpha of the items in the two-factor model is .74.

Team performance: comparative. We followed the practice adopted in a number of other surveys (e.g., Guest & Peccei, 2001; Ramsay et al., 2000) and asked team managers about comparative team performance. Supervisors were asked to rate the performance of the team in comparison with other teams in their organization. The response categories ranged from 1 (*much worse*) through (*about the same*) to 5 (*much better*). Six items covering performance were selected from Wall et al. (2004) and revised for the

team environment. Example items are "Productivity of employees", "Quality of goods and services" and "Employee absenteeism". The internal consistency of the comparative team performance scale is satisfactory (α = .703).

Team OCB. Supervisors assessed extra-role behaviour of their work unit with an adapted version of the individual focused items of Lee and Allen (2002). Instructions are modified and the referent of the measures is changed from individual to the work unit. The items are prefaced with the phrase "Over the past month, how often have employees in your work unit" Example items are "Helped others who had been absent" and "Expressed loyalty towards the organization". Answer categories ranged from 1 (*never*) to 7 (*always*).

McNeely and Meglino (1994) suggested that extra-role behaviours intended only to benefit specific individuals (OCB-I) and those behaviours intended only to benefit the organization (OCB-O) should be distinguished (see also Organ,1997; Williams & Anderson,1991).

With CFA, we examined the fit of a model to the data in which the items loaded on these two targets of citizen behaviour, where OCB-O depicts behaviours to benefit the work team, and compared it with a model with only one citizen behaviour factor. The one factor OCB model showed a significantly better fit than the two factor OCBI-OCBO model: $\Delta\chi^2 = 24.42, \quad \Delta df = 2, p < .01$ with a good internal consistency of the scale items: α = .773.

Collective Team Identification. As a measure of team identification, we used the items of van der Vegt et al. (2005). We asked team members to evaluate the relationship with their team on items such as "I feel like 'part of the family' at my team" and "I really feel as if this team's problems are my own". The items are rated on a 5-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The internal consistency of the scale is .71. Responses were aggregated to the team level. To test whether aggregation was justified, we calculated the within-team interrater agreement statistic $r_{wg(J)}$ (James et al., 1993), and intraclass correlation indices ICC(1) and ICC(2) (Bartko, 1976). The mean $r_{wg(J)}$ for collective team identification, using a uniform null distribution, was .82 (median = .89, SD =.20) indicating strong agreement (LeBreton & Senter, 2008). Furthermore, ICC(1) was .17 and ICC(2) was .42, F = 1.72, p <.01.

Task interdependence. Task interdependence was measured with four-items taken from van der Vegt, Emans and van de Vliert (2001) and is rated by the team manager. The items underwent minor rephrasing to refer to the perspective of the supervisor in rating task interdependency of their teams. Example items are "In order to complete their work, people in my group have to obtain information and advice from each other." and

"People in my group have to work closely with their colleagues to do their work properly." The items are rated on a 5-points Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal consistency of the scale is acceptable (α = .74).

Control variables

Shared PCF in employee-team relationships is likely to be associated with team tenure and team size (De Vos & Tekleab, 2014). When relationships with other team members are long standing, opportunities of interaction and exchange are increased which affects psychological contract terms. Widening the breadth and the scope of the psychological contract, the opportunity costs created by the long-standing relationships expand what parties expect from each other (i.e., mutuality) and enhances team spirit. Conversely, at larger team sizes perceived support from the team (Mueller, 2012), member satisfaction, cohesion and participation levels tend to be lower (Wheelan, 2009). The decreasing amount of communication initiated by team members and the increased social distances in large teams hinder social interaction among members and would harm the development of shared psychological contracts. Therefore, team size and team tenure are included as control variables.

Analysis Strategy

First, the dataset was screened for missing values. All variables had none or a small amount of missing values (< 5%). For scale (continuous) variables with a low rate of missing values, the mean was imputed, for ordinal variables the median. After the data imputation phase, the skewness and kurtosis of the variables was assessed. All outcomes were below the threshold value of |3| and 94% below |2|.

Second, we partitioned the psychological contract fulfilment and team identification constructs in two parts to measure the distinctive effects operating at the individual level, the team level or both. Despite the sufficient homogeneity of item scores in teams for both constructs (i.e., $r_{wg(J)}$) to warrant aggregation, the discussed theory of psychological contract fulfilment and the moderate values of intraclass coefficients suggest that significant differences between teams are accompanied with differences between individuals. Therefore, to test whether the main effects of fulfilment and identification were due to differences between teams or between individuals, the scores on both constructs were partitioned into the mean score of the team and the within-team deviation (i.e. team member score – mean score of the team). If a regression coefficient is significant for the mean score and nonsignificant for the within-team deviation, then the effect operates only at the team level. If, conversely, the coefficient is significant for the within-team deviation and non-significant for the mean score, then the effect operates at the individual level (see also Van Der Vegt et al., 2001).

The partitioning of the team identification scores into the mean score and the within-team deviation implies that the predicted interaction effects in the conceptual model has also to be partitioned into two parts. First, a goal congruence x aggregated collective team identification interaction, indicating that the hypothesized effect occurs due to differences between teams. Second, a goal congruence x collective team identification *deviation* interaction, indicating that the hypothesized effect occurs due to differences in identification between members of the same team.

The partitioning of psychological contract fulfilment and team identification, when added to the division of goal congruence in a learning and a performance factor results in a model depicted in Figure 4.2.

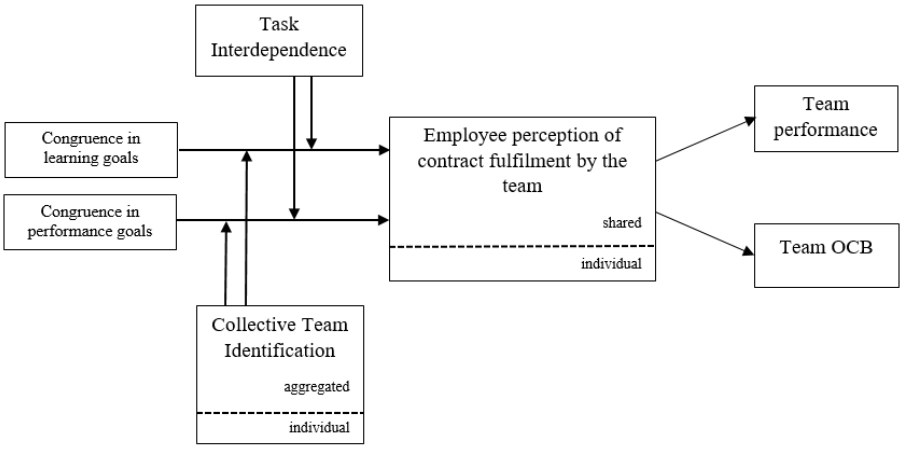

Figure 4.2: Measurement model

Measurement model

We have done reliability and validity checks of the constructs in Figure 4.2 using CFA. Reliability, convergence validity and discriminant validity of all constructs proved to be satisfactory. The measurement model of the constructs showed a relatively good fit to the data: CFI = .905, RMSEA = .045, SRMR = .0426 and should be called a 'close-fitting' model (PCLOSE = .998).

Results

Table 4.1 presents the means, standard deviations and Pearson correlations of the main variables used in this study.

Table 4.2: Means, standard deviations and intercorrelations of the main variables

		M	SD	1	2	3	4	5	6	7	8	9
1.	Team size	3.86	1.65	1.00								
2.	Team tenure	4.97	4.07	.074	1.00							
3.	Employee perception of fulfilment by the team	4.09	.80	-.105*	-.187**	1.00						
4.	Congruence in learning goals	.65	.24	.187**	.115**	-.093*	1.00					
5.	Congruence in performance goals	.87	.25	.109*	.032	-.114**	.418**	1.00				
6.	Team performance	3.28	.46	-.115**	-.098*	.120**	-.059	.020	1.00			
7.	Team OCB	5.27	.70	.016	.081	.092*	-.149**	-.005	.202**	1.00		
8.	Collective Team Identification	3.90	.72	-.081	.079	.304**	-.068	-.037	.038	.065	1.00	
9.	Task interdependence	3.81	.73	.213**	.098*	.041	-.084	-.013	.090*	.188**	.051	1.00

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

The correlations between scale means indicate significant relations between goal congruence and fulfilment (negative as expected), and between fulfilment and team performance and team OCB. There is also significant correlation between both outcome variables. Collective team identification is significant correlated with psychological contract fulfilment. Task interdependence is significant correlated with team OCB.

In Table 4.2 results are presented of the regressions used in hypotheses testing. The first column of the Table reveals the partitioning of the team identification moderator and the perception of fulfilment construct in two parts; the team level (shared) part and the individual part. Also, is shown the partitioning of the predicted interaction effects and the break-down of the goal congruence in two factors (i.e., learning and performance) as a result of confirmatory factor analysis.

Table 4.2: Tests of hypotheses; direct effects and interaction effects

	Perception of fulfilment (shared)	Perception of fulfilment (individual)	Team performance	Team OCB
Controls				
Team size	-.124(.011)*			
Team tenure	-.336(.004)*		.072(.004)	.112(.009)*
Main effects				
Glearn	-.036(.089)			
Gperf	-.139(.068)*			
Perception of fulfilment (shared)			.262(.032)*	.221(.072)*
Perception of fulfilment (individual)			-.008(.027)	-.006(.060)
Moderators				
Task interdependence	.120(.031)*			
CTI (shared)	.327(.039)*			
CTI (individual)		.250(.034)*		
Interactions				
Glearn × task interdependence	-.058(.019)			
Gperf × task interdependence	.047(.020)			
Glearn × CTI (shared)	-.139(.023)*			
Gperf × CTI (shared)	.000(.022)			
Glearn × CTI (individual)		-.013(.026)		
Gperf × CTI (individual)		.128(.027)*		

Notes. Table entries represent standardized estimates with standard errors in parentheses; n = 157 teams, 544 employees. Dependent variables in the columns. Predictors in the rows of the table. Goal congruence is divided in two factors: Glearn (i.e. congruence in learning goals) and Gperf (i.e. congruence in performance goals). CTI = Collective Team Identification.

*$p < .05$

As CFA of the goal congruence construct revealed that a model with two team goal types (i.e., learning and performance) is the best fitting model, two relationships between perceived similarity in goal orientations and shared individual PCF must be tested for hypothesis 1. The results indicate that both relationships are in the predicted direction (i.e., negative), but only the relationship between congruence of performance goals and shared perceptions of fulfilment proved to be significant ($\beta = -.139$, $p < .001$). Thus, hypothesis 1 is partially supported by the data. Furthermore, the results indicate that the mean scores of PCF, measuring shared perceptions in the work team, are positively related to supervisor rated performance of the team ($\beta = .262$, $p < .001$) and team OCB ($\beta = .221$, $p < .001$). The within-team deviations in PCF do not have significant effects. Thus, the effects of psychological contract fulfilment in the dataset operate only at the team-level and support hypotheses 2a and 2b.

Preacher and Hayes (2004, p. 719) argued that mediation is a special case of indirect effects, which implies that a total effect X → Y was present initially. Assessment of indirect effects by itself do not require that assumption. In testing hypotheses 3a and 3b we started with an indirect effects model because this model is "the most constrained or parsimonious as it implies that the only significant relationships observed are the combined effect $(\beta_{mx} \times \beta_{ym})$" (Mathieu & Taylor, 2006, p. 1039). The results showed significant indirect effects of alignment in performance goal orientations via shared psychological contract fulfilment to work outcomes: *team performance*: β = -.045, 90% CI [-.067 -.023]; *team OCB*: β = -.083, 90% CI [-.140 -.033]. The indirect effects of alignment in learning goal orientations are all non-significant: *team performance*: β = -.015, 90% CI [-.045 .010]; *team OCB*: β = -.028, 90% CI [-.089 .019]. We judged whether or not the significant indirect effects of alignment in performance goal orientations also represent mediation by adding total effects to the model. While controlling for team size and team tenure full mediation effects were not supported by the data. One partial mediation relationship proved to be significant: *congruence in performance goals – team performance* ($\beta_{yx.m} = .085, p < .05$; $\beta_{mx} = -.139, p < .001$; $\beta_{ym.x} = .284, p < .001$). Thus, the findings do support hypothesis 3a and are not supportive for mediation hypothesis 3b. Shared psychological contract fulfilment accounts for a significant portion of the goal congruence – team performance relationship. However, this partial mediation effect is only been demonstrated for congruence in performance team goals.

Task interdependence was expected to moderate the relationship between congruence in team goals and shared psychological contract fulfilment. The results show a significant main effect (β = .120, $p < .001$) and non-significant interaction effects: *learning* (β = -.058, *ns*); *performance* (β = .047, *ns*). These findings are not consistent with hypothesis 4.

Hypothesis 5 proposes a moderating role of collective team identification in the goal congruence – shared psychological contract fulfilment relationship. At the team level, the results indicate a significant main effect of team identification (β = -.139, $p < .001$) and a significant interaction effect on the positive relationship between alignment in learning goals (GcL) and perceived psychological contract fulfilment. Figure 4.3 shows this interaction effect as a small, but significant strengthening effect of team identification.

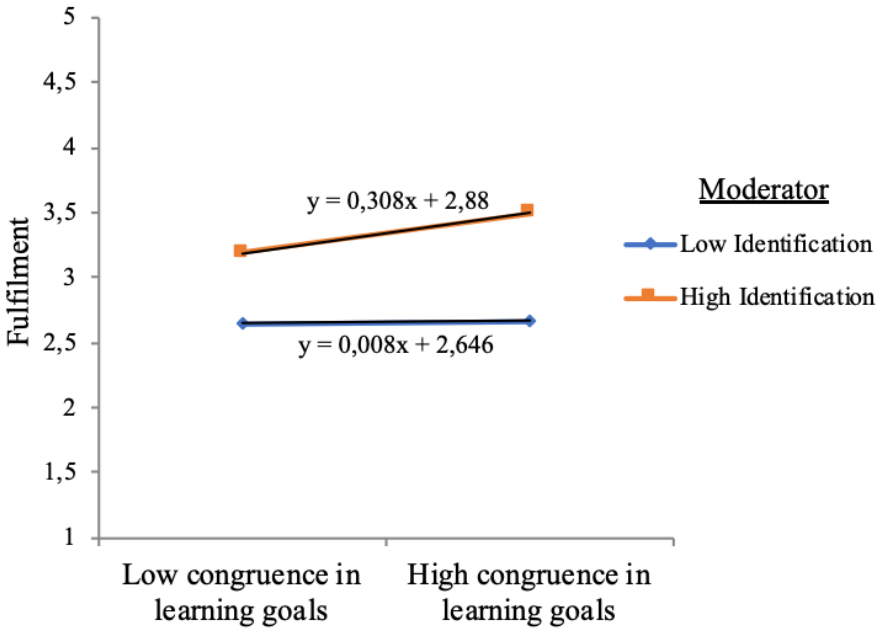

Figure 4.3: Association between congruence in learning goals and shared contract fulfilment moderated by collective team identification.

The moderation effect of team identification on the alignment in performance goals – shared psychological contract fulfilment relationship seems not to exist at all (β = .000, *ns*). However, a *cross-level* interaction effect of team identification was not hypothesized, but one of these proved to be significant: *performance* × *team identification(individual)* (β = .128, $p < .05$). Thus, hypothesis 5 is only partially supported by the data.

Discussion

Implications for theory

To summarise our findings, we have found evidence that the significant effects of perceived similarity in goal orientations (i.e., goal congruence) on team performance is partially accounted for by shared psychological contract fulfilment. Task interdependence and team identification do have significant effects on shared psychological contract fulfilment, but do not act as moderators when considered in combination with congruence of team goals. There is only one exception; the positive effects of perceived similarity in learning goal orientations are strengthened by higher levels of team

identification. The main effect of this similarity proved not to be significant, whereas the main effect of perceived similarity in performance goal orientations is significant, but do not have significant interaction effects.

It might well be that the measurement of perceived similarity with the standard deviation of the goal orientations in the team may underestimate the effects of goal congruence and has affected the interplay of goal congruence with task interdependence and team identification in the model. A number of studies of person-environment (P-E) fit have found that individual's perception of how s/he fits is more strongly related to attitudes and behaviours than actual fit (e.g., Cable & DeRue, 2002; Kristof-Brown & Stevens, 2001; Ostroff et al., 2005). That means that a focus on similarity between team member's goal orientation and their *perceptions* of the goal orientation of the rest of the team (i.e., subjective fit, see Cable & Judge, 1996) would have led to larger effect sizes in the model.

The learning and performance goal orientations in the moderated mediation model do have different effects, although not always predicted. We may conclude that a distinction between goal orientations is indeed essential in studying the effects of perceived similarity in goal orientations on team performance and team extra-role behaviours. This is in line with previous research on goal congruence, value congruence and P-E fit. Learning goal orientation and performance goal orientation are not opposite ends of an underlying continuum, as Dweck (1986) suggested, but are interrelated (Payne et al., 2007). In the measurement of both orientations in our congruence construct we took account of these correlation. However, both orientations differ in their effects on attitudinal and behavioural outcomes as our research demonstrated. As previous research noted, performance goal orientation is in fact, multidimensional and should be partitioned in prove and avoid dimensions (VanDeWalle, 1997). Results indicate that *avoid* performance do have opposite effects (Elliot & Harackiewicz, 1996) on outcomes than learning orientation and prove performance similar effects (Rawsthorne & Elliot, 1999) or none (Payne et al., 2007).

One could suggest that the motivational effect of similarity in *prove* performance goal orientations is stronger than perceived similarity in learning goal orientations. One explanation for this difference in effect is that the focus on strong performance outcomes relative to others and positive judgements about one'competence do require the support of others in the team. Conversely, members in a team with a learning goal orientation can gain, improve or master new skills regardless of actions taken by others in the team. It is possible for members to learn from team work even if other team members are not concerned about mastering new skills. That is not to say that they do not need the team in their learning orientation. Members with a learning goal orientation appreciate a

team context that facilitates learning; they interpret feedback and suggestions of others as aids in skill development. In other words, for performance goal orientation is support and interaction with others a necessary condition. For learning orientation is the team context only a sufficient condition. Therefore, it is understandable that similarity in prove performance goal orientations would be more strongly related to shared individual PCF than similarity in learning goal orientations.

Implications for practice

Obviously, this study has implications for human resource (HR) practices in organizations. First, it is important to consider the goal orientations of employees, when selecting new team members. Organizations may either choose to select employees with similar goal orientations as team members or they may decide to create teams with different, but complementary, orientations. Both choices affect team dynamics, perceptions of psychological contract fulfilment and team performance. Necessary condition for the effectiveness of either choice is that goal orientations of others in the work team are apparent to each team member. When differences or similarities in goal orientations are unnoticed by team members, it will not manifest itself in distinct and recognizable behaviours.

Second, this study provides evidence to support manager behaviours that recognise employees as adding value to their teams. Verbal praise of knowledge, skills, abilities and orientations of team members may prove to be an effective way to increase team identification and member contributions to the team.

Third, providing opportunities to teams to strengthen social influence processes through for example team-building activities may increase the emergence of shared perceptions of psychological contract fulfilment in the team.

Limitations

One issue that should be noted is that we used a cross-sectional design to test a causal model of goal congruence – team performance relationships. We acknowledge that in cross-sectional designs it is very difficult sorting out which causal sequences are plausible and which are not (Taris & Kompier, 2006). In other words, the design does not allow us to reach decisive conclusions about the causation between the variables in the models. For that reason, we have adapted the wording of our hypotheses in this study; we never talked about cause and effect, but always used the 'relationship' wording. A longitudinal design would overcome this limitation and uncover the causal paths between goal congruence, perceived psychological contract fulfilment and work outcomes.

In addition, the cross-sectional design with the same respondents providing measurements of several variables in the moderated mediation model, might have caused (common) method bias (Podsakoff et al., 2003). Method bias can be a problem, through its effects on the path coefficients in a structural model. In this study we used several procedural remedies to control for the effects of common methods bias. For example, we obtained measurements of the predictor and criterion variables in the model from different sources (i.e. employees and supervisors). However, we acknowledge that the use of different sources does not preclude desirability biases, which may affect the results of this study. It might well be that team managers have rated their own teams higher, on average, than other teams or that employees overstate behaviours in the task proficiency construct. In addition, do team managers really know how well other teams in their organization are doing.

In this study, we have controlled only for team tenure and team size and not for variables specifically known to be associated with various manifestations of job performance (e.g., Roth et al., 2012). Adding those controls may have had effects on the strength and significance of the relationships in the model.

Future research

Although task interdependence does not have moderating effects in the model, it has a significant effect on perceived psychological contract fulfilment. We recommend a prominent role of task interdependence in future replications of this research, because of the relationships between perceived similarity in goal orientations and task strategies and the possibilities to control task interdependence in the team by management. A moderator variable under managerial control that influences the effects of perceived similarity in team goals on perceived fulfilment and performance would be a valuable tool in the management of teams.

In this study, we used the van de Walle (1997) scale to measure at the team level perceived similarity in goal orientations. It would be interesting in future research to assess goal congruence with alternative measurement instruments (or develop new ones) and test the moderation and mediation hypotheses again. Will the same pattern of effects be found? What is the role of other elements in team psychological contracts, besides fulfilment, in team behaviours and performance?

Future research in the domain of goal orientations and psychological contracts in teams should focus on the psychological processes through which alignments in orientations and psychological contracts develop. This may provide new ways to increase performance of teams in organizations.

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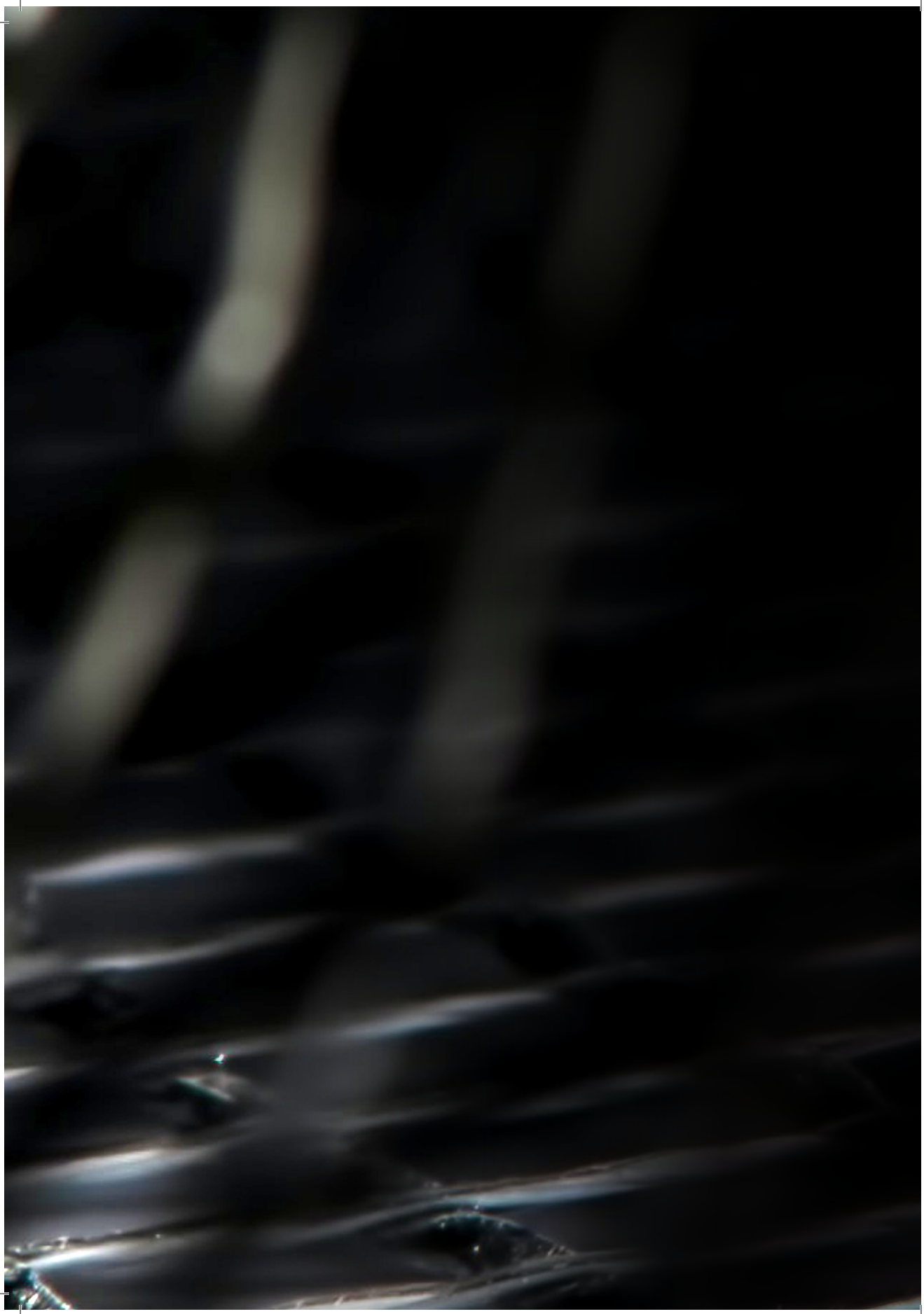

CHAPTER 5

Employee behaviour and well-being in teams: the role of psychological contract beliefs[5]

5 This chapter is under review as:
Schreuder, F., Schalk, R., & Batistič, S. (n.d.). Employee behaviour and well-being in teams: the role of psychological contract beliefs.

Abstract

The research discussed in this chapter tests a model of employee behaviour and well-being in which employees in work teams perceive characteristics of work (re)design, such as job autonomy and complexity, as a function of psychological contract beliefs. In multiple team-based organizations data were collected for all the study variables.

The employee behaviour and well-being model was evaluated for a large sample (n = 1115) with CFA and structural modelling. The study findings indicate weakening effects of perceived fulfilment of team psychological contracts in the significant relationships of autonomy and job complexity with task proactivity, OCB and work engagement.

Keywords: Psychological Contracts, Reciprocity, Work Design, OCB, Work Engagement

Introduction

The different ways work can be designed has long captured the attention of scholars. From Adam Smith's division of labour, Taylors' ideas about "Scientific Management" to the influential theoretical developments in work design theory in the period 1950 to 1980 (Parker et al., 2001), many studies have been conducted examining work design issues (Morgeson & Humphrey, 2006). There is a good reason for the sustained interest in work design, as it is believed to be important for a range of attitudinal, behavioural, cognitive, well-being and organizational outcomes (Morgeson & Humphrey, 2008). From the long history and established theory in work design three key issues arise that warrant attention. First, the explanatory mechanism included in theoretical approaches (see Kompier, 2003 for a detailed discussion) to work design of how the nature and contents of work affects outcomes lacks specificity (Parker et al., 2001) or is not confirmed in subsequent studies (e.g., Fried & Ferris, 1987; Luchman & González-Morales, 2013). Second, it appears that the traditional focus in work design theory on job features such as autonomy and variety is too narrow (Parker & Wall, 2001). As noted by work-design scholars, there are additional work design features (Parker & Ohly, 2009) beyond the factors identified in the much cited Job Characteristics Model (Hackman & Oldham, 1976) affecting employee behaviours and well-being. Many of these factors are expected to become more prominent because of changes occurring in the workplace (Torraco, 2005). For example, social contact, support and interaction are important additional factors in the current work places where team work is increasingly used. Team work may influence and constrain the choice of work design, but also add new design features to work. Team features such as team diversity, team cohesion, team autonomy, and the team context as such (e.g., rewards, training), all can impact viability and effectiveness of a team, as well as affect employee behaviour and well-being. Given the increasing diversity in work contexts, it can be assumed that different forms of work design will be more or less effective dependent on the context conditions. In other words, context factors can have a moderating role which could affect the outcomes of work design.

To address the issues above, this study explores a model of employee behaviour and well-being in which employees construe work characteristics as a function of psychological contract beliefs in work teams. The basic premise of the model is that not structural characteristics of work per se are the primary determinants of attitudes and behaviours in the work place, but employee's perceptions of the work environment. In this regard, the model is related to the social information processing approach (Salancik & Pfeffer, 1978) in work design research by emphasizing the role of social influence of co-workers (see also Chen et al., 2013; Meyer, 1994) in employee's attitudes and behaviours.

The study hypothesizes and investigates the relationship between two work characteristics (i.e., autonomy and job complexity) and multiple work outcomes, such as task proficiency, proactivity, citizenship behaviours and work engagement.

Of the motivational work characteristics, autonomy is the most widely studied work characteristic and is generally the most influential (Morgeson & Humphrey, 2008). Meta-analytic review of the work design literature by Fried & Ferris (1987) and Humphrey et al. (2007) have shown that autonomy is related to performance ratings (e.g., subjective performance; $\rho = .23$) and various attitudinal (e.g., job satisfaction; $\rho = .37$) and behavioural outcomes. Job complexity was included in the analysis as a motivational characteristic beyond the five work characteristics (i.e., skill variety, task identity, task significance, autonomy and feedback from the job itself) identified in the Job Diagnostic Survey (JDS) of Hackman & Oldham (1975; see Marinova et al., 2015 for a meta-analysis of job-design predictors).

Job complexity is covaried with autonomy in the employee behaviour and well-being model, because meta-analytic results (Humphrey et al., 2007) have shown a moderate but significant correlation ($\rho = .43$) between both design variables. In addition, it is plausible to assume that employees in categorising their work job complexity is a summary of motivational characteristics measuring structure of work. For example, Stone and Gueutal (1985) derived empirically the dimensions along which employees actually perceive job characteristics. The results indicate that employees view jobs in terms of a summary dimension labelled "job complexity", incorporating the various individual task characteristics considered by measures like the Job Diagnostic Survey (JDS) and the Job Characteristics Inventory (JCI)(Sims Jr et al., 1976). This finding is consistent with several factor-analytic studies of the dimensionality of employee perceptions (e.g., Benzer & Horner, 2015) and results of meta-analysis (e.g., Wegman et al., 2018). Thus, evidence suggests that job autonomy might be a constituent part of job complexity rather than a distinct factor, as illustrated in the integrated work design framework of Morgeson et al. (2003).

The moderating role of psychological contract beliefs in Figure 5.1 below represents the main contribution of this study to work design research. While there is an abundance of literature on the relationship between work (re-)design and employee's attitudes and behaviours, there are few studies that elaborate on factors that moderate these relationships. Furthermore, this study evaluates the role of psychological contract beliefs within new domains of study (i.e. work design) and extends previous research on psychological contracts to team - employee relationships.

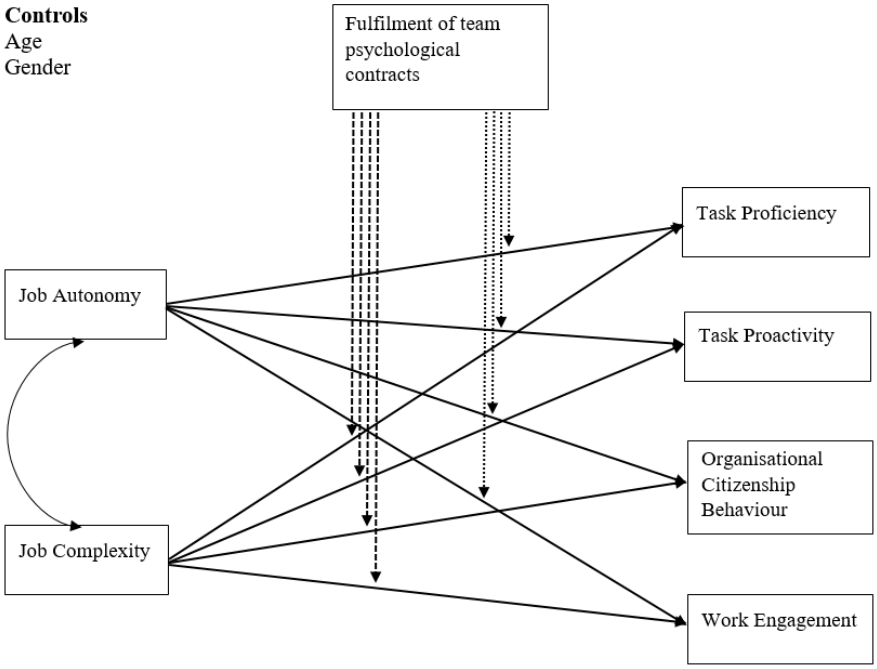

Figure 5.1: Research model.

Theoretical framework and hypothesis development

Work characteristics affect attitudes, behaviours and well-being of employees at work. Work characteristics (as opposed to the narrower concept "job characteristics") are defined in this study as "the attributes of the task, job, social and organizational environment" (Morgeson & Humphrey, 2006, p. 1322). Following the expanded work design model of Humphrey et al. (2007), work characteristics can be divided into three major categories: motivational, social and work context. The category of motivational characteristics has been the most investigated in the work design research (Morgeson & Humphrey, 2006). The basic principle of motivational characteristics of work is that they enrich (Loher et al., 1985) work and jobs (i.e. made more motivating and satisfying) if higher levels of these characteristics are present.

The social category of work characteristics received less attention in work design research (Morgeson & Campion, 2003), but has become increasingly important in the work place by the emergence of the work team as a means for structuring work (Barrick et al., 1998; Kozlowski & Bell, 2013). The work team has become in organizations the primary focus of commitment (Becker et al., 1996) and plays a crucial role in employee health and well-being (Wilson et al., 2004) and productivity (Salanova et al., 2003). A team

has, by definition, some degree of task- and job interdependence (Guzzo & Dickson, 1996) affecting other social characteristics of work such as receiving social support and feedback from others.

The third category of work characteristics, work context, manifest itself in the ways organizations are structured (Morgeson et al., 2010) (e.g., centralisation decision-making, formalisation of rules and procedures), perceptions of organizational climate (Schneider & Reichers, 1983), the endurance, effort and the activity aspects of the job (Stone & Gueutal, 1985), work conditions (e.g. health hazards, temperature and noise) (Edwards et al., 1999) and issues of ergonomics (Campion & Thayer, 1985).

In this study we suggest that perceptions of motivational characteristics like job autonomy and job complexity together with the incremental effects of evaluations of social and contextual characteristics of work affect work behaviours and employee well-being. Working in a team environment, employee's evaluations of social and contextual characteristics of work find expression in the formation of psychological contract beliefs. Perceptions of fulfilment of team psychological contracts are hypothesized to moderate the relationships between job autonomy, job complexity and employee behaviours.

The formation of psychological contract beliefs is mostly studied in employee - employer/ organization relationships. However, the conceptualization of psychological contracts by Rousseau - "individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (Rousseau, 1989, p. 123) - does suggest that psychological contracts also exist in employee - co-worker relationships.

Mutuality and reciprocity are the key concepts in psychological contract beliefs. For psychological contracts to emerge, there must be mutual agreement on the contract terms; the obligations of *both* parties involved in the contract. In the terminology of social exchange theory (e.g., Cook et al., 2013; Cropanzano & Mitchell, 2005); there is agreement that there is an exchange, what will be exchanged and how. Schalk & de Ruiter (2019) conceptualize this agreement as mutuality: "the degree of agreement on the terms of the psychological contract" (p. 53). In addition, the parties (e.g., employee, employer, organization, work team) in the psychological contract perceive that fulfilment of their part of the deal will be contingent upon other party's fulfilment. In this regard, Schalk & de Ruiter (2019) refer to "reciprocity" in psychological contracts, which should be defined as: "the degree of balance in the fulfilment of mutual obligations in the psychological contract" (p. 54). Therefore, a team psychological contract will be in balance if the employee perceives that he/she and other co-workers in the team both

contribute equally. Unbalances in team psychological contracts occur, when the terms of the agreement each employee understands and agrees to, are not mutual. Typically, an agreement does not necessary mean that employees and co-workers share the same interpretation of its terms. In such situations, discrepancies are perceived between what is promised (or understood) and what is received. When co-workers in a work team fail to fulfil perceived obligations, because they do not respond to contributions in ways the employee believes co-workers are obliged to do so, the psychological contract is violated and the perceived balance in reciprocation is negative (i.e., negative reciprocity). Conversely, co-workers in a team can also do extremely well by exceeding expectations and fulfil perceived obligations above average. This situation of positive reciprocity or generalized reciprocity (Sahlins, 1972) is expected to be motivational for the employee in work.

Social Exchange Theory (Blau, 1964), and particularly the norm of reciprocity (Gouldner, 1960), is often used to explain the work outcomes of perceived unbalances in psychological contracts. When parties in an exchange strive for balance in the relationship, one may expect that when unbalances are perceived the parties attempt to restore the balance by adjusting attitudes and behaviours. In psychological contract research, these adjustments has been linked to changes in commitment (e.g., Chen et al., 2008; Ng et al., 2010), trust (e.g., Bal et al., 2008), job satisfaction (e.g., Jiang et al., 2017), organizational citizenship behaviours (e.g., Atkinson et al., 2018; Bordia et al., 2010), in-role performance (Zhao et al., 2007) and workplace deviance (e.g., Restubog et al., 2015). The effects of autonomy and complexity on work outcomes can be predicted along similar lines.

Autonomy and complexity are the results of managerial practices of empowerment as an assumed means of enhancing effectiveness at work (Wall et al., 2002). Empowerment entails, among others, the delegation of decision-making responsibilities to lower hierarchical levels of the team or the individual employee.

Job autonomy is a motivational characteristic that prompts employee's feelings of personal responsibility of work outcomes. Autonomy reflects "the extent to which the job allows the freedom, independence, and discretion to schedule work, make decisions and select the methods to perform tasks" (Morgeson et al., 2005, p. 399). Autonomy is a multifaceted concept (Breaugh, 1985) and encompasses three interrelated aspects (Morgeson & Humphrey, 2006) associated with freedom in a) work scheduling, b) decision making, and c) work methods.

Increased autonomy in work will allow employees greater flexibility in how they define their work roles -"the total set of performance responsibilities associated with one's employment"(Murphy & Jackson, 1999, p. 335) and engage in work behaviour. In addition, autonomy actually means that employees not only have the discretion to take on broader and more proactive tasks but also means increased perceptions of personal control over the work environment (Parker, 1998). When increased autonomy in work is the result of HR policies of the organization, aspects of work related to job autonomy will be incorporated as part of an employee-organization psychological contract. Employees in organizations with self-directed more or less autonomous teams will likely perceive those aspects as part of their team psychological contracts. In either case, perceptions of fulfilment will be reciprocated by the employee in work engagement, citizenship behaviours and in proactive work role behaviours as a means to restore the balance in the psychological contract.

In the hypotheses below, we contrast "task proactivity" against "task proficiency" as different work role outcomes of psychological contract beliefs. With task proficiency work performance is assessed in the standard way as "the degree to which an employee meets the expectations and requirements of his or her role as an individual" (Griffin et al., 2007, p. 331). Conversely, task proactivity describes employee behaviour that involves uncertainty and aspects of work roles that cannot be formalised. Uncertainty occurs when the inputs, processes, or outputs of work systems lack predictability (Wall et al., 2002). In such working environments with uncertainty employees must not only react and adapt to changes, but also anticipate and act in self-directed ways. Thus, task proactivity is defined here as: "the extent to which individuals engage in self-starting, future oriented behaviour to change their individual work situations, their individual work roles, or themselves"(Griffin et al., 2007, p. 332).

Regarding beliefs of autonomy in psychological contracts, we suggest that the increased discretion to take on broader and proactive tasks will result in enhanced levels of task proactivity (H1b), but that the greater flexibility in defining work roles would not necessarily mean that employees will be more task proficient in their jobs. Hence, we expect a negative relationship with task proficiency (H1a), because the amount of freedom and the independence in work does not guarantee that tasks will be carried out according to role expectations and requirements.

H1a: Autonomy is negatively related to task proficiency such that employees with higher levels of autonomy are less proficient in meeting (formalised) role requirements than those with lower levels of autonomy.

H1b: Autonomy is positively related to task proactivity such that employees with higher levels of autonomy are taking more self-directed actions to anticipate or initiate changes in their uncertain work environment than those with lower levels of autonomy.

Motowidlo & Borman (1997) describe job performance as the aggregated contribution value of discrete employee behaviours to organizational goal accomplishment. In essence, job performance is multidimensional and can be partitioned in multiple behavioural categories. For example, Borman and Motowidlo (1993) distinguished two performance behaviours (i.e., task performance and contextual performance), which are related to cognitive ability, personality and learning experiences of employees in different ways. Evidence suggests that team managers making overall judgments of job performance, weight both performance behaviours of employees independently (Motowidlo & Van Scotter, 1994) and roughly equal (Borman & Motowidlo, 1997; Johnson, 2001).

We suggest that task performance behaviours, such as task proficiency and task proactivity, are more constrained by ability, work scheduling and task design (Organ & Ryan, 1995) as opposed to contextual or organizational citizenship behaviours (Organ, 1988, 1997). Thus, it may be assumed that employees with higher levels of autonomy in their psychological contracts perceive greater discretion to engage in organizational citizenship behaviours (OCB) than in (required) task behaviours (Smith et al., 1983). Hence, we hypothesize a relationship between autonomy and employee citizenship behaviour.

H2: Autonomy is positively related to employee organizational citizenship behaviour such that employees with higher levels of autonomy are more inclined to engage in organizational citizenship behaviour than those with lower levels of autonomy.

A meta-analysis of over 200 engagement studies by Christian et al. (2011) has shown that work engagement was positively related to job autonomy ($\rho = .39$) and job complexity ($\rho = .24$). Although there are different views on the concept of work engagement (Bakker et al., 2008), we define and operationalise work engagement in this study as a positive, fulfilling, affective-motivational state of work-related well-being (e.g., Schaufeli et al., 2002). As a job resource, autonomy plays an intrinsically motivational role (Schaufeli &

Bakker, 2004) because it fosters employee's growth, learning and development. It may be also crucial for employee health and well-being because autonomy in work is associated with more opportunities to cope with stressful situations (Bakker & Demerouti, 2007). Hence, we hypothesize:

H3: Autonomy is positively related to work engagement such that employees with higher levels of autonomy are more engaged at work than those with lower levels of autonomy.

The second motivational characteristic associated with work design explored in this study is job complexity. Job complexity refers to "the extent to which the tasks on a job are complex and difficult to perform" (Morgeson & Humphrey, 2006, p. 1323). Complexity (or its opposite, job simplicity; Campion, 1988; Edwards et al., 2000) is, by itself or in comparison with referents (Oldham et al., 1986; Oldham & Miller, 1979), a favourable work condition and internally motivating (Oldham et al., 1982) for employees. Employees associate job complexity with the "development and use of different work-related skills, exercising and expanding cognitive, social, and practical abilities" (Hornung et al., 2010, p. 192). Challenging demands of complex work engenders feelings of psychological meaningfulness (Kahn, 1990) (i.e., to be worthwhile, valued and valuable), but requires often coordination and cooperation with co-workers in the work team. Thus, aspects of job complexity may also be found in team psychological contract beliefs, which will be reciprocated by work role behaviours, citizenship behaviours and work engagement. Meta-analysis of Humphrey et al. (2007) has showed that job complexity was positively related to subjective performance ratings ($\rho = .37$), job satisfaction ($\rho = .37$) and job involvement ($\rho = .24$). As predicted, higher levels of job complexity were also strongly related to perceptions of overload ($\rho = .59$).

In the next hypotheses, we hypothesize positive relationships of job complexity with citizenship behaviours and work engagement.

H4: Job complexity is positively related to employee citizenship behaviour such that employees with higher levels of complexity are more inclined to engage in citizenship behaviour than those with lower levels of complexity.

H5: Job complexity is positively related to work engagement such that employees with higher levels of complexity are more engaged at work than those with lower levels of complexity.

Increases in complexity of work are related to heightened mental ability requirements (Campion, 1989), which must be met with increased knowledge and skills of the employee. Meeting the requirements of complex tasks is motivational, contributes to job satisfaction and enhances the likelihood of proactive behaviour. But increasing the motivational properties of work by enhancing complexity has a trade-off (Morgeson & Campion, 2002) in efficiency (e.g., Campion & McClelland, 1991, 1993); the efficiency with which work is performed tends to decrease. The decrease in efficiency affects task proficiency negatively. Thus, in the prediction of work role behaviours of employees, we expect a positive relationship with task proactivity and a negative one with task proficiency:

H6a: Job complexity is negatively related to task proficiency such that employees with higher levels of complexity are less proficient in meeting (formalised) role requirements than those with lower levels of complexity.

H6b: Job complexity is positively related to task proactivity such that employees with higher levels of complexity are taking more self-directed actions to anticipate or initiate changes in their uncertain work environment than those with lower levels of complexity.

Positive evaluations of the social characteristics of the job and the work context increase the motivational effect of job autonomy and job complexity on attitudes and behaviours. Employees as members of work teams perceive aspects of the working environment as part of mutuality of their team psychological contracts; aspects that are evaluated and assessed against what is promised (or understood) and what is received. For example, in teams where jobs are contingent on other's work constructive feedback, advice and assistance from co-workers (Karasek et al., 1982), trust (Cook & Wall, 1980; Robinson, 1996) and supportive, resilient and clarifying management styles (Kahn, 1990) promote fulfilment perceptions of team psychological contracts and facilitate in-role and extra-role performance. Conversely, non-supportive attitudes and behaviours of co-workers and supervisors in teams makes it more difficult for employees to benefit from challenging and demanding tasks and increased autonomy in work. Thus, we expect that the incremental motivational effects of positive evaluations of social and context characteristics depend on the perceived degree of balance in team psychological contracts.

For job autonomy in the research model, we hypothesize:

H7: Perceived negative reciprocity in psychological contracts weakens the motivational effects of autonomy on a) citizenship behaviour b) work engagement and c) task proactivity, while perceived positive reciprocity strengthen the relationships.

For job complexity, we expect an equivalent moderating effect:

H8: Perceived negative reciprocity in the psychological contracts weakens the motivational effects of job complexity on a) citizenship behaviour b) work engagement and c) task proactivity, while perceived positive reciprocity strengthen the relationships.

Method

Population and sample

The data of this study were collected by student researchers under close supervision. Employees completed questionnaires in Dutch and English language about their working environment and the relationships with experiences and perceptions. The English scales in the questionnaires were translated in Dutch by means of a back-translation technique (Sinaiko & Brislin, 1973). Employees who could not be linked to a specific work team or had missing values on all research variables were excluded from analysis. The final sample consisted of 1115 employees working in various sectors of the Dutch economy. 56.2% of the respondents in the sample were female. The mean age of the respondents was 36 years (SD = 13.3). The higher levels of education were over-represented among the respondents; 52,3% of the employees in the sample had at least a bachelor degree. The respondents worked almost 9 years in the organization of which 5.5 years in the current work team. 69.6% of the respondents had an employment contract on a permanent basis (69.6%) for on average 29 hours per week (SD = 12.6).

Measures

Fulfilment of team psychological contracts. We used the Schreuder et al. (2017) team psychological contract scale to measure perceptions of social characteristics of work. The items of this scale are prefaced with: "Did the team or a colleague in your team promise you that the team would…" followed by 15 items. Example items are "… offers me the opportunity to work together in a pleasant way." or "…help you to develop skills that you can also use outside the team". The items are rated on a 6-point scale ranging

from 0 (*No, not at all*), 3 (*Yes, and promise fully kept*) to 5 (*Yes, but I received much more than promised*). The scale measures perception of fulfilment at the individual level of analysis, showing good internal consistency (α =.95).

Levels of reciprocity in team psychological contracts were calculated from the item scores of the fulfilment scale after omitting item scores 3 (*Yes, and promise fully kept*), because score 3 was thought to reflect balanced relationships in the team (i.e., team and employee both contribute equally). Scale items with score 1 (*Yes, but promise not kept at all*) or 2 (*Yes, but promise only kept a little*) indicate negative discrepancies in the perception of the employee between what is believed to be promised and what is received. Conversely, items with score 4 (*Yes, but I received more than promised*) or 5 (*Yes, but I received much more than promised*) indicate positive discrepancies. With perceived negative reciprocity in psychological contracts, we refer in this study to employees with a mean score between 1 and 3 (except 3) on the promised items in the fulfilment scale. Positive reciprocity in psychological contracts is expected, when employees evaluate promises on average above 3 in the fulfilment scale.

Work Engagement. In the present study, we used the core dimensions (Salanova & Schaufeli, 2008) vigour and dedication as indicators of engagement. Vigour and dedication are both measured with three items in a shortened version of the Utrecht Work Engagement Scale (UWES). Schaufeli et al. (2006) demonstrated the factorial validity, the good internal consistency and test-retest reliability of the shortened UWES scale in 10 different countries. The scale included the following example items: "At my work, I feel bursting with energy." and "My job inspires me." The items are scored on a 7-point frequency rating scale from 1 (*never*) to 7 (*every day*).

With CFA, we examined the fit of a two-factor model to the data, in which the items loaded on the engagement dimensions vigour and dedication. The goodness-of-fit of this model was good: CFI = .999, RMSEA = .029, SRMR = .0085. However, the strong correlation between both dimensions (r = .91) and the need to have enough scale items to pass any metric and scalar invariance tests (Byrne et al., 1989) did us decide to choose for a one-factor solution for work engagement. The scores of the 6-item UWES one-factor scale showed good internal consistency (α =.90).

Task Proficiency. To measure individual in-role performance, we included 3 items measuring task proficiency. Task proficiency describes the degree to which an individual meets role expectations and requirements that can be formalized (Griffin et al., 2007). Employees were asked to rate how often they had carried out the behaviour over the past month on a scale ranging from 1 (*never*) to 5 (*always*). An example item of this

3-item scale is "Carried out the core parts of the job well". The internal consistency of the task proficiency scale is good (α =.89).

Task Proactivity. Individual task proactivity was assessed by three items from Griffin's (2007) work role performance scale. The construct can be defined as "as the extent to which individuals engage in self-starting, future oriented behaviour to change their individual work situations, their individual work roles, or themselves." (Griffin et al., 2007, p. 332). The items of this scale asked employees to rate how often they had carried out the behaviour the last month on a scale ranging from 1 (*never*) to 5 (*always*). An item of this scale is, for example, "Came up with ideas to improve the way in which your core tasks are done." The internal consistency of this scale is good (α =.85).

Autonomy. Autonomy was assessed by three items from Peccei and Rosenthal's (2001) psychological empowerment scale. The construct refers to the extent to which employees feel they are able to make their own decisions in their job. An example item is "I can make my own decisions in carrying out my job". The three-items are rated on a 5-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The scale showed good internal consistency (α =.83).

Job Complexity. Job complexity was assessed with three items from Morgeson and Humphrey's (2006) Work Design Questionnaire (WDQ). Complexity refers to the extent to which the tasks on a job are complex and difficult to perform. An item in this scale is, for example, "The job involves performing relatively simple tasks". The items are rated on a 5-point Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). The scale showed acceptable internal consistency (α =.71).

Organizational Citizenship Behaviour (OCB). Employees rated their extra-role behaviour at work. The OCB-items of Lee and Allen (2002) were used to construct the scale. Example items are: "I help others who have been absent" and "I express loyalty towards the organization". Answer categories ranged from 1 (*never*) to 7 (*always*).

Following previous research, we used CFA to compare a model in which OCB is divided in individual-directed (i.e., OCB-I) and organization-directed behaviours (i.e., OCB-O) with a one factor model of citizenship behaviours (see for a meta-analytic review Hoffman et al., 2007). CFA clearly showed that the two-factor OCB-I/OCB-O model of extra-role behaviour is to be preferred to the one-factor OCB model and hence confirmed the empirical distinction between OCB-I and OCB-O in social exchanges. The fit of the two-factor model was good: CFI = .990, RMSEA = .047, SRMR = .0285. Reliabilities of the 3-item OCB-I and 3-item OCB-O subscales are .75 and α = .76 respectively.

Measurement model

The measurement model of all constructs has a relatively good fit to the data: CFI = .944, RMSEA = .044, SRMR = .0421. Tests for common method bias with a common latent factor revealed some measurement bias in the dataset, but a chi-square difference test between the unconstrained and constrained (i.e. to be equal) models showed no significance: $\Delta\chi^2 = 223, \quad \Delta df = 275, p = .991.$ That means that the bias is evenly distributed between the indicators of all the latent constructs in the measurement model. Finally, bias corrected factor scores were used in a path analysis where controls (i.e. age, gender) and interaction effects are added.

Results

Table 5.1 presents the means, standard deviations, correlations and reliabilities of the main variables used in this study.

Table 5.1: Descriptive statistics, correlations and reliabilities.

	M	SD	1	2	3	4	5	6	7	8
Fulfilment of team psychological contracts	3.89	.99	(.95)							
Work Engagement	5.33	.98	.283**	(.90)						
Task Proficiency	4.21	.54	.108**	.362**	(.89)					
Task Proactivity	3.45	.76	.253**	.309**	.240**	(.85)				
Job Autonomy	3.45	.82	.132**	.220**	.076*	.214**	(.83)			
Job Complexity	3.50	.85	.043	.283**	.025	.223**	.214**	(.71)		
OCB-I	5.27	1.0	.232**	.316**	.340**	.256**	.058	.021	(.75)	
OCB-O	5.54	.96	.169**	.531**	.361**	.291**	.154**	.155**	.395**	(.76)

Notes. Between brackets on the diagonal: alpha coefficients. Significance of correlations: *$p < .050$, **$p < .010$

The Pearson correlation coefficients in the Table indicate significant relations between organizational citizen behaviour and work engagement. There is a significant correlation between task proficiency and task proactivity. Employee perceptions of contract fulfilment do have significant correlations with all the other constructs in the model, with the largest value for the correlation with Work Engagement ($r = .283$, $p < .01$). Moreover, OCB-O is related in the dataset with work role behaviours, job design features and employee well-being.

In Table 5.2 below, the standardised estimates, the standard errors and significance levels are shown for the direct effects in the path model. Organizational Citizen Behaviour is

in Table 5.2 depicted as two factors OCB-I and OCB-O, according to the perceived target of citizen behaviour. The different treatment of both constructs of citizen behaviour follows from model fit in CFA.

Table 5.2: Estimates, standard errors and significance levels of direct effects in the path model.

	Task Proficiency	Task Proactivity	OCB-I	OCB-O	Work Engagement
Controls					
Age	.169***(.002)	.148***(.002)		.052* (.001)	.067** (.001)
Gender		-.108***(.039)			.033† (.027)
Main effects					
Job Autonomy	-.060† (.034)	.075* (.033)	.043 (.036)	.122***(.027)	.153***(.025)
Job Complexity	-.143***(.029)	.083** (.028)	-.048 (.029)	.111***(.022)	.298***(.022)
Moderator					
Fulfilment of team psychological contracts	-.049 (.028)	.152***(.026)	.288***(.029)	.184***(.022)	.295***(.021)

Notes. Table entries represent standardized estimates. Standard errors in parentheses; $n = 1115$ employees. Dependent variables in the columns. Predictors in the rows of the table. The empty cells in the table contain non-significant coefficients. The corresponding paths are omitted from the analysis, in order to achieve adequate global fit of the path model. † $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

The results indicate that autonomy is negatively related to task proficiency ($\beta = -.60$, $p < .10$) and positively related to task proactivity ($\beta = .075$, $p < .05$). The data thus support hypotheses 1a and 1b. Moreover, autonomy has significant relationships with citizen behaviours intended to benefit the organization or team ($\beta = .122$, $p < .001$), and work engagement ($\beta = .153$, $p < .001$). This result is in line with hypothesis 3 and partly with hypothesis 2. Although the relationship with OCB-I is in the right direction, it is not significant.

Job complexity is positively related to OCB-O ($\beta = .111$, $p < .001$) and work engagement ($\beta = .298$, $p < .001$). However, the relationship with OCB-I is non-significant and in a not-expected direction. Thus, hypothesis 5 is fully supported by the data and hypothesis 4 only for the OCB-O part.

Hypothesis 6 predicts a negative relationship between job complexity and task proficiency (H6a) and a positive one between complexity and task proactivity (H6b). Our results indicated that complexity was indeed negatively related to task proficiency ($\beta = -.143$, $p < .001$) and positively related to task proactivity ($\beta = .083$, $p < .01$). Thus, the results are fully in line with hypothesis 6.

The moderating role of perceived psychological contract fulfilment is depicted in Table 5.3 below. Rows 1 and 2 of the Table show the effect sizes, direction and significance for all employees in the dataset. The estimates in row 3 up to 6 reflect two alternative path models fitted to the data; a model in which the employees perceive on average negative reciprocity in their psychological contracts in the work team and a model with only perceptions of positive reciprocity in psychological contracts.

Fulfilment in team psychological contracts was expected to moderate the relationships between autonomy and citizenship behaviours, work engagement and task proactivity. For all employees in the dataset, perceived psychological contract fulfilment does have significant positive relationships with task proactivity ($\beta = .152$, $p < .001$), citizenship behaviours ($\beta_{OCB\text{-}O} = .184$, $p < .001$) and work engagement ($\beta = .295$, $p < .001$). But in a moderating role, perceived contract fulfilment weakens the predicted positive relationships between autonomy and citizenship behaviours, work engagement and task proactivity.

Table 5.3: Estimates, standard errors and significance levels of measured interaction effects.

		Task Proficiency	Task Proactivity	OCB-I	OCB-O	Work Engagement
	Interactions					
1.	Job Autonomy × Fulfilment of team psychological contracts	-.012 (.022)	-.014 (.023)		-.074** (.016)	-.043† (.016)
2.	Job Complexity × Fulfilment of team psychological contracts		-.070** (.019)	-.022 (.022)	-.051† (.018)	-.047† (.017)
3.	Job Autonomy × Negative reciprocity in perceived fulfilment	.009 (.025)	.026 (.032)		-.043 (.035)	-.077† (.032)
4.	Job Complexity × Negative reciprocity in perceived fulfilment		-.149** (.027)	-.016 (.045)	-.070 (.036)	.030 (.030)
5.	Job Autonomy × Generalized reciprocity in perceived fulfilment	-.037 (.017)	.000 (.018)		-.025 (.020)	-.063† (.022)
6.	Job Complexity × Generalized reciprocity in perceived fulfilment		.020 (.016)	-.016 (.033)	-.014 (.023)	.051 (.025)

Notes. Table entries represent standardized estimates. Standard errors in parentheses; $n = 1115$ employees. Dependent variables in the columns. Interactions in the rows of the table. The empty cells in the table contain non-significant coefficients. The corresponding paths are omitted from the analysis, in order to achieve adequate global fit of the path model. † $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Although the interaction effects are small, two effects are significant; OCB-O ($\beta = -.074$, $p < .01$) and work engagement ($\beta = -.043$, $p < .10$). Similar results are found for job complexity; the results indicate significant negative interaction effects in the relationship with task proactivity ($\beta = -.070$, $p < .01$), OCB-O ($\beta = -.051$, $p < .10$) and work engagement ($\beta = -.047$, $p < .10$).

Hypothesis 7 predicted for autonomy weakening effects of negative reciprocity in team psychological contracts and strengthening effects of positive reciprocity. For employees with on average negative reciprocity in their contracts, the moderation is in the predicted direction (i.e. weakening): OCB-O ($\beta = -.043$, ns), work engagement ($\beta = -.077$, $p < .10$) or in the opposite, not-expected, direction: task proactivity ($\beta = .026$, ns). For employees with on average positive reciprocity in their contracts, the results indicate no interaction effect at all (i.e. task proactivity) and weakening effects of perceived contract fulfilment: OCB-O ($\beta = -.025$, ns), work engagement ($\beta = -.063$, $p < .10$). Thus, with regard to the employees with negative reciprocity in their team psychological contracts only hypothesis 7b) is supported. Furthermore, the data do not support the predicted strengthening effects of positive reciprocity in team psychological contracts.

The final hypothesis dealt with the expected moderating role of reciprocity in perceived fulfilment in the job complexity – work behaviours and -engagement relationships. Hypothesis 8c is partially supported by the data. Negative reciprocity in team psychological contracts weakens the effects of job complexity on task proactivity ($\beta = -.149$, $p < .01$). Furthermore, positive reciprocity in team psychological contracts strengthens the relationship with task proactivity, but this effect was not significant ($\beta = .020$, ns).

Hypothesis 8a) and 8b) are not supported by the data; the coefficients for citizenship behaviour and work engagement are non-significant or not in the predicted direction ($\beta = .030$, ns).

Discussion

Implications for theory

We found that autonomy and job complexity have significant effects on work role behaviours, citizenship behaviours and employee well-being. Enhanced autonomy and/or increased complexity in the task environment decreases proficiency in work, but increases task proactivity, citizenship behaviours and work engagement. Perceived psychological contract fulfilment has a direct effect on work behaviours and work

engagement, and a limited moderating effect. The negative (i.e., weakening) effects dominate and are often non-significant. The indicators of contract fulfilment reveal the dominance of the middle values of the scale. That means in effect that employees appreciate their psychological contracts in the team environment as almost balanced (see Table 5.1: M = 3.89, SD = .99). Therefore, large effects of fulfilment cannot be expected. The predominance of weakening effects of contract fulfilment could be attributed to discrepancies in person-environment (P-E) fit (Caplan, 1987). For example, employees in work teams have to deal with co-workers to perform, which may be perceived as a hindrance for autonomy and control. The perceived discrepancy between the desired amount of autonomy and the actual amount affects reciprocity levels of their psychological contracts and will become negative.

It is not clear, however, whether employees associate enhancements in freedom and interdependence in work or more challenging and demanding tasks with changes in HR practices in work teams. Employees may believe that in the reciprocal obligations (Coyle-Shapiro & Kessler, 2002) with the organization (or employer), the organization is reciprocating employee fulfilment by redesigning jobs. If this is true, there would be a mismatch in the model of the motivational characteristics (i.e., autonomy and complexity) and the social characteristics of work design as captured in the mutuality aspects of contract fulfilment.

Implications for practice

Increasing the amount of challenging work as a way to improving P-E fit may not work as the increased job complexity demands the participation, support and feedback of co-workers. When these co-workers lack the abilities or motivation to participate, discrepancies between what is desired and the perceived amount of fit persist and psychological contract beliefs will be violated. However, as part of HR practice encouragement of employee participation could be in most instances a wise strategy. For team managers, participation provides a check of perceptions of job demands and resources and of employees' abilities and needs. New effective teams may be composed by selection and recruitment of employees with the right mix of abilities and skills. Altering the characteristics of employees by training, on the other hand, would improve P-E fit, increase the likelihood of contract fulfilment and enhance the effects of work(re)design.

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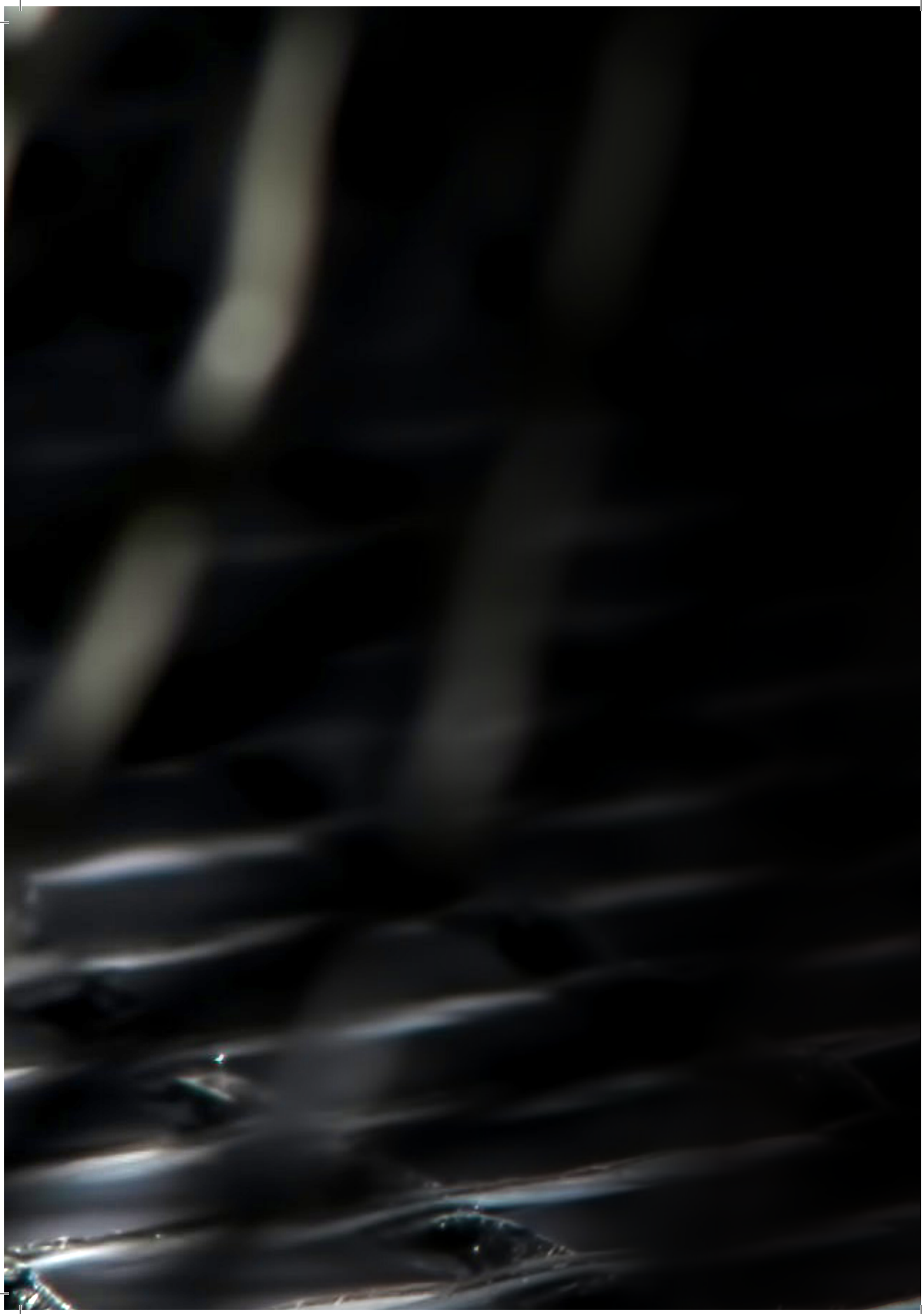

CHAPTER 6

Permanent versus temporary workers in teams: understanding the links between psychological contracts and attitudes[6]

6 This chapter is under review as:
Schreuder, F., Schalk, R., & Batistič, S. (n.d.). Permanent versus temporary workers in teams: understanding the links between psychological contracts and attitudes.

Abstract

The main purpose of this study is to examine the role of psychological contract beliefs across permanent and temporary workers in teams in the explanation of work attitudes and behaviours. Mediation of psychological contract beliefs in work teams was tested with path analysis in SEM. Moderation with multi-group comparison techniques.

Psychological contract beliefs in work teams explain work attitudes and behaviours in teams. However, no significant differences are found between employees with different work status. Analyses also show that the relationships in teams between psychological contract content and fulfilment on the one hand and work outcomes on the other were rarely moderated by work status. This suggests that temporary workers in teams will respond in similar ways as permanent workers to adjustments in their psychological contract. HR practice should invest in psychological contracts of both temporary and permanent workers in the team to enhance team effectiveness. To study the effects of work status in a team environment, a psychological contract instrument is used especially designed for work teams.

Keywords: work status, team psychological contracts, mediation, moderation

Introduction

One of the most striking changes in work today is the transformation of work organised around individual jobs into team-based structures (Kozlowski & Bell, 2013). Increasing global competition, consolidation, and innovation necessitate rapid, flexible, and adaptive responses by organizations creating pressures on organizational structure and the workforce. Organising work around teams accompanied with a large share of temporary workers in the workforce are efficient ways to enable the necessary organizational flexibility.

Statistics show that temporary employment has risen sharply in European labour markets, ranging in 2018 from around 3% in Latvia and Estonia, 16% in Finland and France, to 26% in Poland and Spain (OECD, 2018, p. 284). While temporary employment is important in organizations in terms of its size and its utility, it remains unclear in what way attitudes and behaviours of temporary workers in work teams differ from permanent workers. Understanding these differences is of research and practical interest because differences in attitudes and behaviours tend to have effects on the ability of teams to function effectively. It will help HR practitioners to select and construct more effective teams (Hollenbeck et al., 2004). However, research on attitudes, behaviours and well-being of temporary workers has been relying on behavioural theories and models that were developed in the context of individual jobs in functionalised structures (Kozlowski & Ilgen, 2006) and permanent employment contracts (Connelly & Gallagher, 2004). Fortunately, there have been some good attempts to understand the mediating mechanism by which psychological experiences of temporary and permanent workers may lead to individual attitudes and behaviours. A narrative review by De Cuyper et al. (2008) has summarised the views on mediation as differences in work and employment strain and perceptions of fairness. The assumed role of work stressors and the commonly applied "fairness" theories of social exchange (Blau, 1964) and social comparison (Festinger, 1954) in the field of research on temporary employment can be considered as an plausible explanation of the key areas proposed by Beard and Edwards (1995) in which psychological experiences of temporary workers are likely to differ from permanent workers. They distinguished five areas of difference: job insecurity, lack of control and predictability, type of psychological contract and social comparison processes.

The focus of this study is on psychological contract beliefs in the explanation of the effects of temporary employment on work attitudes and behaviours. In the mediation model, we assume that employees develop psychological contracts - beliefs regarding exchange agreements - with co-workers (and supervisors) in work teams. However,

the widely used tools to measure psychological contracts are specifically designed to understand employer-employee relationships and are not suitable without adjustments for teams. Kozlowski and Bell (2013) pointed out the unique characteristics of working in teams, which require adaptations of the existing measuring instruments: two or more individuals of the same hierarchical level, brought together to perform organizationally relevant tasks, interact socially (face to face or, increasingly, virtually), and exhibiting dependencies in workflows, goals and outcomes (Kozlowski & Bell, 2013).

Measuring psychological contract content and fulfilment in a team environment to predict work attitudes and behaviours of temporary and permanent workers represents the main contribution of this study to scientific research.

Theoretical Framework

Temporary employment is in the European Labour Force Survey defined as "job or work contracts of limited duration with objective conditions for termination" (OECD, 2019). Conditions for contract termination, such as reaching a certain date, completion of an assignment or return of another employee who has been temporarily replaced, are generally mentioned in the employment contract. Workers with a temporary employment contract are not a homogeneous group. Temporary workers include: seasonal workers, agency and direct-hire workers, contractors (Connelly & Gallagher, 2004) and workers with specific training contracts.

Organizations have turned to temporary employment contracts to respond quickly to constant and unpredictable changes (Chambel & Castanheira, 2006) in the external environment. The temporary work force provides more numerical flexibility in times of peak demands (De Jong et al., 2018), or bring in more specific skills when needed (Moorman & Harland, 2002). In addition, as a source of competitive advantage organizations need a highly committed workforce with employees strongly involved in their jobs (Lawler III, 1992). To develop management styles that reconciles these paradoxical trends, organizations need to understand the effects of temporary contracts on job attitudes and behaviours of workers. However, research on the relationships between work status and attitudes and behaviours at work has shown inconclusive and often contradictory results (De Cuyper et al., 2008). Some studies suggest higher job satisfaction among permanent workers than among temporary workers (Aletraris, 2010; Callea et al., 2014; Hall, 2006; Kinnunen & Nätti, 1994), while others find opposite patterns (De Cuyper & De Witte, 2005, 2006a; De Witte & Näswall, 2003; McDonald & Makin, 2000) or no significant differences (De Cuyper & De Witte, 2006b). In addition, meta-analysis by Wilkin (2013) found that job satisfaction of the permanent worker group was indeed (slightly) higher, but the effect sizes were small and varied between the different types

of temporary workers. Some studies ascertain that permanent workers engage in organizational citizenship behaviours to a higher degree than temporary workers do (Ang & Slaughter, 2001; Chambel & Castanheira, 2006; Coyle-Shapiro & Kessler, 2002; Van Dyne & Ang, 1998), while analyses in other studies lead to contrary conclusions (Engellandt & Riphahn, 2005; Feather & Rauter, 2004) or to no significant differences (Chambel & Alcover, 2011).

Few studies have addressed the relationships between work status and well-being indicators such as employee engagement and emotional exhaustion. Again, the results are mixed and does not allow firm conclusions. For example, permanent workers are less engaged in work than temporary workers in one country, but not in another (De Cuyper et al., 2010). Studies report lower engagement and more exhaustion among permanent workers (De Cuyper et al., 2014; Mauno et al., 2005), while other studies find no significant differences (Kinnunen et al., 2011; Krausz et al., 1995) or draw contrary conclusions (e.g., Kinnunen & Nätti, 1994; Virtanen et al., 2005).

These inconclusive and contradictory results suggest that type of employment contract is not a primary determinant of work attitudes and behaviours. However, the limited duration of temporary contracts as opposed to the indefinite term contracts of permanent workers might have significant consequences for worker's expectations with regard to their employment relationship. Coyle-Shapiro (2002) argues that employment can be seen as a trade-off between effort and loyalty in return for benefits and it is likely that permanent and temporary workers differ in their expectations about this trade-off. Psychological contract theory provides an explanatory framework (Shore & Tetrick, 1994) for understanding the employment relationship (Coyle-Shapiro & Shore, 2007) at the individual level of permanent and temporary workers and establishes a clear link between fulfilment of employees' expectations and work attitudes and behaviours. With regard to job attitudes and behaviours, previous research has shown that beliefs of fulfilment or breach (Morrison & Robinson, 1997) of the psychological contract is correlated with various work outcomes, such as job satisfaction, turnover intentions, organizational commitment, and organizational citizenship behaviour (see Zhao et al., 2007 for a meta-analysis). Furthermore, the theory is easy transferable to employment relationships in work teams.

The psychological contract has been defined as "an individual´s belief regarding the terms and conditions of an exchange agreement between that focal person and another party" (Rousseau, 1989, p. 123). A psychological contract must be distinguished from expectations, which are employee beliefs about the job, work team and organization. The expectations construct has a broader meaning than the psychological contract

construct, because "only those expectations that emanate from perceived implicit or explicit promises" (Robinson, 1996, p. 575) are part of the psychological contract, while employee expectations might exist without or in the absence of perceived promises. Since psychological contracts are in the "eye of the beholder" (Rousseau, 2001, p. 534), contract beliefs refer to agreement perceptions about the inducements and contributions of the parties that are involved in the contract. Unbalances in psychological contracts occur, when the terms of the agreement each party understands and agrees to, are not mutual. Typically, not everyone who agrees to an agreement has the same interpretation of its terms. In such situations, discrepancies are perceived between what is promised (or understood) and what is received. When a party in a psychological contract fail to fulfil its obligations, because they do not respond to contributions in ways the other party believes they are obliged to do so, the psychological contract is violated and the perceived balance in reciprocation is negative. Conversely, a party in a psychological contract may perceive that the other party fulfils its obligations extremely well, in comparison to its own contributions to the contract (i.e., generalised reciprocity Schalk & de Ruiter, 2019).

Although the primary focus of psychological contract research has been on the relationship between the organization and the employee, Rousseau's conceptualization and operationalisation of psychological contracts indicates that almost any party in an organization can hold psychological contract beliefs (Sverdrup, 2012) and that an employee can have multiple psychological contracts simultaneously (Shore et al., 2004). Thus, the contract framework can be applied on employee - co-worker relationships in work teams as well.

Psychological contracts in organizations and in work teams differ depending on the work status of the employee. Research suggests that temporary workers share other beliefs in terms of psychological contract content (i.e., promises made) and fulfilment (i.e., promises kept) than permanent workers.

At the organizational level, previous research suggests that temporary workers have a more transactional psychological contract with a focus on economic exchanges of promises, while the contract of permanent workers is more relational with both economic as socio-emotional promises (e.g., Rousseau, 1990). This implies that psychological contracts of temporary workers are more narrow in scope (McLean Parks et al., 1998) than the contracts of permanent workers and include fewer promises. The narrow scope of employer's promises in temporary worker's contracts has received considerable empirical support (Chambel & Castanheira, 2006; Coyle-Shapiro & Kessler, 2002; De Jong et al., 2009). Furthermore, one may also expect differences in perceived employee

obligations between temporary workers and permanent workers. Employers are less willing to invest in temporary workers, because the return on these investments is unlikely (Isaksson et al., 2010) due to the transient nature of the contract. By contrast, permanent workers are frequently regarded as crucial, justifying considerable investments in their long-term employment relationship. Interpreting psychological contracts as beliefs about reciprocal exchanges, the beliefs may result in actions contingent on others behaviour. Thus, investments of the employer in employment relationships may lead to adjustments in employee contributions. In other words, temporary workers perceive psychological contracts with mutual low obligations (i.e., few inducements, few contributions), whereas permanent workers share high mutual obligations contracts. Unbalances occur when temporary workers increase their contributions anticipating on a transition to permanent employment or permanent workers contributing less relative to employer's investment, because of perceptions of job security.

In work teams temporary workers are treated differently by supervisors and co-workers, creating perceptions of interactional injustice (Kirkman et al., 1996), which will be reciprocated by reducing their contributions to the team. Temporary workers are considered to be of lower status (Boyce et al., 2007), which in a team environment results in lower involvement in advice and friendship networks (Wilkin et al., 2018). Furthermore, mixing different types of employment contracts in work teams is likely to influence social identity and self-esteem of permanent workers more negatively than those of temporary workers (Chattopahyay & George, 2001; Tsui et al., 1992). Permanent workers perceive that they do not get reliable job support from their temporary co-workers (Smith, 1994) and may feel that their employer and their team is less-committed to them. They perceive increased competition for positions by the pool of temporary rivals in the team slowing mobility opportunities (Broschak & Davis-Blake, 2006; George, 2003). One can therefore infer from these arguments that permanent workers in the team feel that their psychological contracts has been violated affecting work attitudes and behaviours negatively. However, temporary workers in teams do not consider failure to fulfil team obligations as violation or breach as easily than permanent workers, because they anticipate that their relation with the team is of short duration and will be discontinued in the future. In addition, perceptions of fewer promises between temporary workers and co-workers in the team reduces the likelihood of perceiving a breach.

In summary, there are reasons for supposing that temporary workers in teams may hold different beliefs in terms of psychological contract content and fulfilment than permanent workers. Therefore, we hypothesize the following:

H1: Psychological contract beliefs in teams differ across work status.

Psychological contract beliefs in terms of content and fulfilment in work teams may explain work attitudes and behaviours. However, research findings indicate that it is not the type of employment contract per se that explains attitudes and behaviours; rather, it is how temporary and permanent workers in the work team perceive their team relationships along with differences in, for instance, work experiences (Conway & Briner, 2005), personality (Raja et al., 2004) and exchange ideologies (Coyle-Shapiro & Neuman, 2004) that influence these perceptions. Assuming that employee perceptions of team relationships are reflected in psychological contract beliefs, we hypothesize (full) mediation of contract beliefs in the work status - attitude/behaviour relationship:

H2: Perceived content and fulfilment of psychological contracts mediate differences in the work attitudes and behaviours of temporary and permanent workers in teams.

Testing psychological contract beliefs in work teams across work status as a psychological explanation of attitudes and behaviours increases in practical relevance, when the relationships between contract beliefs and related attitudes and behaviours are similar for permanent and temporary workers. If a relationship in one of the employee groups between psychological contract beliefs and a related attitude is significantly weaker or stronger than in the other employee group, then this implies that beliefs about content and fulfilment are not of equal importance in explaining attitudes and behaviours. We believe that this lack of similarity in relationship strength diminishes the explanatory value of the psychological contract framework in work teams and makes management of both employee groups in teams more difficult. Following Conway and Briner (2002), we have put forth a moderation hypothesis subsidiary to Hypothesis 2 testing the similarity in contract beliefs-outcome relationships.

H3: The relationships between psychological contract beliefs and work attitudes and behaviours in teams will be moderated by work status.

In order to develop a research model, we chose work attitudes and behaviours from existing research on work status and psychological contract beliefs. Because the relationships between work outcomes are not the subject of this study, we followed findings from previous research for inclusion in the model. Thus, in Figure 6.1 work engagement was directly related to turnover intention (Agarwal et al., 2012; Schaufeli & Bakker, 2004), job satisfaction (Yalabik et al., 2013) and OCB (Saks, 2006). Job satisfaction was linked to OCB (Williams & Anderson, 1991).

Theoretically, the core dimensions of work engagement (i.e., vigour and dedication) and burnout (i.e., emotional exhaustion and cynicism) can be conceptualized as opposites (Maslach & Leiter, 2008; Schaufeli et al., 2002). In Figure 6.1 we followed the empirical evidence (González-Romá et al., 2006) supporting this conceptualization by adding relationships of emotional exhaustion similar to work engagement, but with a different sign (see also Cropanzano et al., 2003).

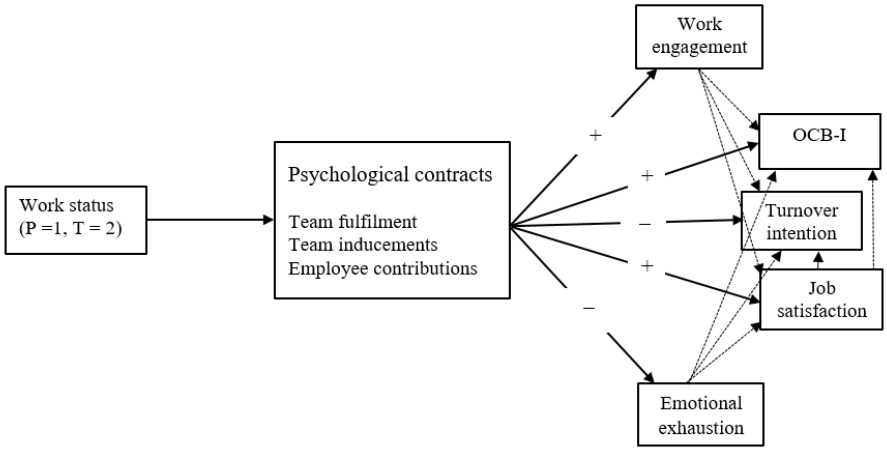

Figure 6.1: Research model.

Method

Population and sample

The data of this study were collected by student researchers following a strict protocol. Employees and team managers completed questionnaires in English and Dutch language about their working environment and the relationships with experiences and perceptions. Certified and independent translators translated the English scales in the questionnaires into Dutch and back into English. In addition, the items of the original and the newly translated scales were pretested and the psychometric properties of both scales evaluated. The final sample size consisted of 535 employees working in one of 122 work teams. Most employees in the sample were female (55.7%). 38.7% of the employees have General Secondary Education as the highest educational level, 29.3% has a Bachelor degree and 15.3% a Master degree or PhD. 72.3% of the employment contracts in the sample were permanent, 27.7% temporary. Temporary workers in the sample were, on average, significantly younger (28 versus 42 years), work significantly less (22 versus 31 hours per week), and had shorter tenures with their current work team (1.8 versus 7.7 years) and organization (2.5 versus 12.7 years) compared to permanent workers.

Measures

Work status. Work status was indicated by a dichotomous variable, where employees reported whether their contract type was either permanent (coded 1) or temporary (coded 2).

Psychological contracts in work teams. To measure psychological contracts in the team context we used two horizontal psychological contract (HPC) scales developed by Schreuder et al. (2017). In these scales, perceptions of mutual obligations (i.e., mutuality) and perceptions of the degree of balance in the fulfilment of those obligations (i.e., reciprocity) are separated to determine their relative effect.

The team obligations scale comprises 15-items like "… the team would take your interests into account when making decisions." or "… the team would help you to get your job done". In this study, we used the mutuality as well as the reciprocity aspects of this scale.

The member obligations scale is complementary to the team obligations scale, as it reflects what happens with obligations and fulfilment to the team if a discrepancy is perceived between a team promise and what is actually received. Example items of this 16-item scale are "Develop new skills if that benefits my team" and "Do everything to keep up the image of the group". Answer categories of both scales ranged from 0 (No, not at all) to 5 (Yes, but I received much more than promised). Of this scale only the mutuality aspects are used in this study.

PCF - kept promises by team. This construct was assessed with the psychological contract fulfilment scores on the 15 items of the team obligations scale. The results showed good internal consistency (.95).

PCC - team inducements. This part of the content of the psychological contract was treated as a non-latent variable, being the sum of the obligations promised by the team.

PCC - employee contributions. This non-latent variable measures the mutuality aspects of the member obligations scale, being the sum of the perceived obligations to the team by the employee.

Employee engagement. We used the core dimensions (Salanova & Schaufeli, 2008) vigour and dedication as indicators of engagement. Vigour and dedication are both measured with three items in a shortened version of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006). Items of the short version of the UWES scale are, for example, "At my work, I feel bursting with energy." and "My job inspires me." The items of

the scale are scored on a 7-point frequency rating scale: never, almost never (a few times a year or less), rarely (once a month or less), sometimes (a few times a month), often (once a week), very often (a few times a week), always (every day).

With CFA, we compared a one-factor model with a two-factor model in which the items loaded on the vigour and dedication dimensions. The one-factor model showed a significantly better goodness-of fit to the data than the two-factor model: CFI = .996, RMSEA = .054, SRMR = .0137, $\Delta\chi^2 = 7, \Delta df = 1, p < .01$. The internal consistency of the 6-item one-factor UWES scale is .91.

Emotional exhaustion. This construct was measured with the Maslach Burnout Inventory-General Survey (Schaufeli et al., 1996). The scale included three items (e.g., "I feel emotionally drained by my work"). The items are scored on a 7-point frequency rating scale ranging from never (1) to every day (7). The scale showed good internal consistency reliability (α = .81).

Organizational Citizenship Behaviour. This construct was assessed with the individual focused items of Lee and Allen (2002). Examples of these items are "I help others who have been absent" and "I express loyalty towards the organization". Answer categories ranged from never (1) to always (7). In the original scale, Lee and Allen (2002) conceptualized extra-role behaviour in terms of the intended target or beneficiary of the citizenship behaviour.

Lee and Allen distinguished two types of OCB, as earlier suggested by Williams and Anderson (1991) and Organ (1997); citizen behaviours directly intended to benefit the organization (OCB-O), and those directed to individuals (OCB-I). They argued that OCB-O is likely a direct function of employee's beliefs about their work characteristics, while OCB-I, primarily helping individuals at work, reflects a 'natural expression of employee's affect at work'. In the present study, only the items of the OCB-I dimension are used (α = .78).

Job satisfaction. Overall job satisfaction is measured with a single-item "Taking everything into consideration, how do you feel about your job as a whole?" rated on a 7-point Likert scale (1 = extremely dissatisfied, 7 extremely satisfied). We used a single-item measure instead of a job satisfaction scale for reasons of space in the questionnaire, survey costs and face validity issues. Meta-analysis has shown that the minimum reliability of the single-item measure is reasonable; close to .70 (Wanous et al., 1997). Furthermore, concurrent and construct validity of the measure is acceptable (Dolbier et al., 2005).

Turnover intention. Turnover intentions were measured by a scale (Colarelli, 1984) composed of three items: "If I have my own way, I will be working for this organization one year from now", "I frequently think of quitting my job", "I am planning to search for a new job during the next 12 months". These items were anchored from strongly disagree (1) to strongly agree (5), the scale's internal consistency was .84.

Covariates. We included gender, age and educational level as control variables in the structural models, when comparing psychological contracts and work outcomes of permanent and temporary workers.

Analysis Strategy

The indicator variables in the dataset were screened for missing values. All variables had none or a small amount of missing values (< 5%). For the scale (continuous) variables with a low rate of missing values, the mean was imputed, for ordinal variables the median. The skewness and kurtosis of the indicator variables was measured to assess normality. All outcomes were below the threshold value of -2 or 2.

The indicator variables of the latent factors were analysed in a Confirmatory Factor Analysis (CFA). The measurement model showed good goodness-of-fit to the data: CFI = .952, RMSEA = .050, SRMR = .0396 in conjunction with acceptable values of reliability, convergent validity and discriminant validity of the factors (i.e., Composite Reliability (CR) > .70, Average variance extracted (AVE) > .50, Maximum Shared Variance (MSV) < Average variance extracted). Next, we tested for configural, metric and scalar invariance (Van de Schoot et al., 2012). The measurements showed adequate goodness-of-fit when analysing a freely estimated model across work status: CFI = .987, RMSEA = .045, SRMR = .0320. The constrained models showed no significant decrease in fit. Finally, the factor scores of the measurement model were corrected for common method bias (Podsakoff et al., 2003) and substituted in mediation and moderation models.

Mediation of psychological contract content and fulfilment was tested in path models following the SEM approach recommended by James and Brett (1984). In this approach two conditions must be met for full mediation: (1) a significant coefficient in the path of antecedent X to the mediator M; and (2) a significant coefficient in the path of the consequence Y to the mediator M. A goodness-of-fit test is then needed to confirm empirically the absence of a direct effect of X on Y. For partial mediation in the SEM approach, see James et al. (2006).

Hypothesis 3 was analysed using the multi-group comparison technique in SEM, where the levels of work status (i.e. permanent vs temporary) are treated as different groups. The dataset was split along the two values of work status and the equivalence of the paths between psychological contracts in teams and work outcomes was compared across permanent and temporary workers.

Results

Table 6.1 presents the means, standard deviations, and correlations for all study variables.

Younger workers in the sample have more often a temporary employment contract (r = -.473). Temporary employment contracts are accompanied with higher turnover intentions (r = .142) and lower work engagement (r = -.137). Emotional exhaustion seems not to differ significantly between permanent and temporary workers (r = -.073, *ns*). Fulfilment of promises by the team increases job satisfaction (r = .152), citizenship behaviours (r = .194) and engagement (r = .276) of workers, but also lowers turnover intentions (r = -.158). Job satisfaction is significantly related to turnover intentions (r = -.449), work engagement (r = .443) and emotional exhaustion (r = -.275).

All the measures of psychological contracts in this study are significantly linked to each other. Both measures of contract content are significantly correlated (r = .824) and relate significantly with contract fulfilment (content PC team: r = .893; content PC employee: r = .749). More promises by the work team as perceived by an employee is associated with more promises of the employee to his/her team. This suggests a balancing act; an increase of promises of one party in the contract are balanced with more promises of the other party. Perceptions of fulfilment increase with more comprehensive psychological contracts: the more promises are perceived; the more employees will show confidence in team functioning and feel treated fairly. Conversely, employees showing confidence will encourage the work team to make new contract promises.

Tables 6.2 and 6.3 display the promises and commitments exchanged in the work team as measured by the team obligations scale of Schreuder et al. (2017). Perceptions of fulfilment are compared across two types of employment contracts (i.e., permanent vs temporary).

Table 6.1: Means, Standard Deviations, and Zero-Order Correlations.

		M	SD	1	2	3	4	5	6	7	8	9	10	11
1.	Work Status (P = 1,T = 2)	1.28	.44											
2.	Age	38.32	13.43	-.473*										
3.	Gender (M = 1, F = 2)	1.56	.50	.067	-.073									
4.	Educational level (1 - 6)	3.41	.99	.050	-.112**	-.029								
5.	Content PC team (0 - 15)	12.66	4.22	.024	-.019	-.042	.017							
6.	Content PC employee (0 - 16)	12.76	4.73	.023	-.004	-.097*	-.017	.824**						
7.	Kept promises by team (1 - 5)	2.71	1.08	.045	-.078	-.029	.003	.893**	.749**					
8.	Job satisfaction (1 - 7)	5.15	.94	.019	.040	-.028	-.014	.026	.013	.152**				
9.	Turnover intention (1 - 5)	1.96	.95	.142**	-.216**	-.053	.176**	-.048	.007	-.158**	-.449**			
10.	Work engagement (1 - 7)	5.01	.94	-.137*	.165**	.000	-.066	.141**	.105*	.276**	.443**	-.583**		
11.	Emotional exhaustion (1 - 7)	2.80	1.09	-.073	.019	-.032	.023	.051	.118**	.011	-.275**	.277**	-.293**	
12.	OCB-I (1 - 7)	5.04	.97	-.018	.004	-.026	.035	.120**	.175**	.194**	.076	-.090*	.256**	-.030

Note. n = 535 for all variables. P = permanent, T = temporary; M = male, F = female; Educational level: 1 = primary education, 6 = master degree or PhD; PCF = psychological contract fulfilment, PCC = psychological contract content.

* Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed)

Table 6.2: Content of the psychological contract (i.e. content PC team) and promises kept by work teams as perceived by permanent or temporary workers.

	Permanent		Temporary		Significance	
Did the team or a colleague in your team promise you that the team would…	% Yes	Kept promises? (1-5)	% Yes	Kept promises? (1-5)	Diff. in %	Diff. in Mean
Take your interests into account when making decisions.	76.7	2.93	78.4	2.95		
Offer you the opportunity to learn.	81.4	3.14	84.5	3.10		
Help you to develop skills that you can also use outside the team.	72.9	3.08	77.0	3.15		
Value your competences and skills.	83.2	3.14	87.2	3.25		
Pay attention to your problems and needs.	85.8	3.08	85.8	3.30		**
Ask for your help when it is busy.	88.1	3.19	88.5	3.23		
Help you to get your job done.	85.3	3.08	87.2	3.21		
Work on projects that we all support.	84.2	3.21	81.8	3.24		
Take your opinion seriously.	86.8	3.26	89.9	3.26		
Be proud of my achievements.	82.7	3.18	85.1	3.29		
Work together based on trust.	84.5	3.27	85.1	3.29		
Allow me to work in my own way.	85.0	3.26	87.2	3.24		
Will work in a pleasant atmosphere.	88.9	3.33	90.5	3.52		*
Offer me the opportunity to work together in a pleasant way.	88.4	3.35	89.9	3.46		
Offer me the opportunity to take initiative.	86.8	3.32	85.1	3.38		

Note. Column Diff. in %: Fisher Exact test two-tailed. Column Diff. in Mean: one factor analysis of variance. † p < .10, *p < .05, **p < .01, ***p < .001

Table 6.3: Content of the psychological contract (i.e. content PC employee) and promises kept by permanent or temporary workers.

	Permanent		Temporary		Significance	
The past few weeks, I promised my team or a colleague in my team that I would…	% Yes	Kept promises? (1-5)	% Yes	Kept promises? (1-5)	Diff. in %	Diff. in Mean
Sacrifice myself for the benefit of the team.	64.4	2.01	61.6	1.84		
Consider the interest of the team as my own interest.	86.0	2.78	82.9	2.64		
Do everything to keep up the image of the team.	81.8	2.72	79.5	2.55		
Only perform the tasks that I was told to do.	56.7	1.76	57.5	1.67		
Do a good job.	86.8	3.07	90.4	3.18		
Help my teammates with their work during busy times.	86.3	2.97	94.5	3.19	**	†
Work longer than is required to finish the job.	84.4	3.05	86.3	2.96		
Develop new skills if that benefits the team.	79.7	2.63	76.7	2.51		
Be always on time.	79.2	2.83	90.4	3.30	**	**
Voluntarily take on tasks to make work of others more manageable.	76.8	2.52	77.4	2.41		
Commit myself to avoid problems with other team members.	80.7	2.80	80.1	2.66		
Share my knowledge and skills with the other team members.	83.6	2.87	84.9	2.90		
Play an active role in team meetings.	82.1	2.77	80.1	2.57		
Mediate when other members of the team have problems.	77.0	2.51	73.3	2.34		
Make suggestions about how other members of the group can improve their work.	77.8	2.46	72.6	2.29		
Enthusiastically perform tasks that I would rather not do.	79.4	2.44	81.5	2.55		

Note. Column Diff. in %: Fisher Exact test two-tailed. Column Diff. in Mean: one factor analysis of variance. † $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Employees perceive relatively more team inducements than employee contributions. Promises and commitments by the work team are better kept than the employee does. Although the differences are minor, permanent and temporary workers in the sample perceive an unbalance: teams perform better in their part of the psychological contract than themselves.

Promises and commitments of work team are made in the large majority of cases with no significant differences in the perceptions of permanent or temporary workers. Relatively low percentages are found for item "Help you to develop skills that you can also use outside the team" (i.e., 72.9% vs 77.0%). Perceived promises are almost always kept by the work team: only one team obligation scored below "3" in the five-points scale (i.e., "Take your interests into account when making decisions"). The fulfilment perceptions did not differ significantly between the two employment contract groups, except promises such as "Pay attention to your problems and needs" and "Will work in a pleasant atmosphere". Temporary workers perceived on those items more fulfilment than permanent workers (i.e., 3.30 vs 3.08; 3.52 vs 3.33).

Employee contributions covers almost all areas of the member-team psychological contract. Relatively low percentages "yes" are found for "Only perform the tasks that I was told to do" and "Sacrifice myself for the benefit of the team", which was expected. The mean values of the perceived obligations indicate low levels of fulfilment; almost all items in the scale score on average below "3" in the five-points fulfilment scale. Temporary workers perceive better fulfilment than permanent workers on contributions such as "Help my teammates with their work during busy times" and "Be always on time" (i.e., 3.19 vs 2.97; 3.30 vs 2.83). The two groups do not differ significantly in the other contribution perceptions.

In summary, the results of Tables 6.2 and 6.3 across permanent and temporary workers raise doubts about the hypothesized relationship between work status and the diverse aspects of psychological contracts in teams. The large majority of the perceived team inducements and employee contributions do not suggest significant differences across work-status. Thus, the data does not support Hypothesis 1 and must be rejected.

In Table 6.4 the results are shown of the full mediation model. While several aspects of psychological contracts in work teams significantly predict individual level attitudes and work outcomes, the relationships with work status proved not to be significant. This means that a necessary condition for mediation (i.e., the independent variable X must affect mediator M) is violated and mediation cannot be established. Thus, Hypothesis 2 must be rejected.

Table 6.4: Estimates, standard errors and significance levels of direct effects in the full mediation model.

	PCF Kept promises by team	PCC Team inducements	PCC Employee contributions	Work engagement	Emotional exhaustion	OCB-I	Turnover intention	Job satisfaction
Controls								
Age				.269(.001)***			-.107(.002)***	-.043(.003)
Gender							-.042(.047)	-.028(.071)
Educational level				-.021(.019)		.058(.035)	.110(.023)***	
Main effects								
Work status	.040(.092)	.024(.408)	.023(.458)					
Work engagement						.270(.076)***	-.634(.053)***	.396(.081)***
Emotional exhaustion							.185(.030)***	-.201(.045)***
Mediators								
PCF – Kept promises by team				.735(.045)***	.078(.080)	.326(.086)***	-.142(.058)*	.277(.089)**
PCC – Team inducements				-.445(.012)***	-.146(.021)	-.374(.022)***	.071(.015)	-.269(.019)**
PCC – Employee contributions				-.050(.007)	.204(.013)**	.228(.013)**	.093(.009)	

Notes. Table entries represent standardized estimates. Standard errors in parentheses; $n = 535$. PCF = psychological contract fulfilment; PCC = psychological contract content. Predictors in the rows of the table. Dependent variables in the columns. The empty cells in the table contain non-significant coefficients. The corresponding paths are omitted from the analysis, in order to achieve adequate global fit of the path model: cmin/df = 2.464, CFI = .983, RMSEA = .052, SRMR = .0304.
† $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Table 6.5: Estimates and 90% bootstrap Confidence Intervals for differences in path coefficients.

	Work engagement	Emotional exhaustion	OCB-I	Turnover intention	Job satisfaction
Kept promises by team	-.071 [-.268 .085]	-.191 [-.550 .135]	.220 [-.088 .532]	.069 [-.192 .286]	.041 [-.360 .354]
Team inducements	.006 [-.048 .055]	.024 [-.064 .099]	-.057 [-.160 .035]	-.017 [-.091 .061]	-.040 [-.117 .031]
Employee contributions	-.010 [-.048 .021]	.022 [-.024 .061]	.011 [-.053 .066]	-.008 [-.058 .023]	.014 [-.052 .083]

Notes. PCF = psychological contract fulfilment; PCC = psychological contract content. Predictors in the rows of the table. Dependent variables in the columns.

Hypothesis 3 was tested by taking the differences in the path coefficients and generating standard errors and 90% bootstrap CI for each difference. The results are depicted in Table 6.5.

All confidence intervals in Table 6.5 reveal that a population difference of zero is very plausible. In other words, the results do not indicate significant differences in path coefficients. Therefore, Hypothesis 3 must be rejected. Work status does not moderate the relationships between psychological contracts in teams and behavioural and attitudinal outcomes.

Discussion

Implications for theory

In this study we found almost none significant differences across work status in the perceptions of team inducements and contract fulfilment, except for two socio-emotional promises: "Pay attention to your problems and needs" and "Will work in a pleasant atmosphere". Reciprocation of team inducements and fulfilment by perceived employee obligations showed no significant work status effect, although two promises to the team were significant in both content and fulfilment (i.e., "Help my teammates with their work during busy times" and "Be always on time").

The absence of a work status effect in employee – co-worker relationships in teams was confirmed in the analysis of the full mediation model. The beta coefficients between work status and the measured components of psychological contracts in work teams were not significant. Thus, mediation by psychological contract beliefs could not be established in this study. However, psychological contract beliefs in work teams were useful in explaining work attitudes and behaviours.

The results of this study indicate that other theories are required to explain work status differences in the team environment. One approach that might be useful in this respect is social comparison theory (Wood, 1989). Working together in teams triggers social comparison processes, which differentially affect how employees with different work status evaluate themselves.

The results raise questions about what may explain the almost absence in work teams of a work status effect in employee – co-worker relationships. One possibility is the importance of individual background characteristics (Bernhard-Oettel et al., 2005; Scheel et al., 2013) of the contract holders with explanatory effects that may be intertwined

with the type of employment contract. Table 6.1 and Table 6.4 indicate this possibility by showing significant effects in the covariates.

HR practitioners would suggest that fulfilment perceptions have more to do with the HR approach of an organization (implemented by a line manager) while in a team, working together in achieving group objectives, work status is of lesser importance than the collaboration and interaction with co-workers. However, employees in an organization can have multiple psychological contracts simultaneously; it might well be that significant work status effects exist in employee - employer or in employee - line manager relationships, while work status effects are almost absent in employee – co-worker relationships or take another form (e.g., parttime vs. full-time, Thorsteinson, 2003). Furthermore, characteristics of the work environment might interfere with perceptions of contract fulfilment. For example, Boyce et al. (2007) denotes the role of power and status in organization's climate in stigmatising members in a team with a relatively large influence on temporary workers. Last but not least, psychological contracts by themselves may explain the absence of work status effects. Previous research suggests that temporary and permanent workers hold different expectations against which employment relationships are evaluated (De Cuyper & De Witte, 2006b, 2007). In addition, meta-analysis by Wilkin (2013) has shown that temporary workers are not a homogeneous group. Thus, differences in contract evaluations may also exist among the various types of temporary workers in teams.

Implications for practice

Little evidence was found in this study for the role of work status as a moderator of the relationship between psychological contract beliefs in teams and work outcomes. This finding is consistent with research results of Conway and Briner (2002) almost two decades ago on the role of psychological contract beliefs in attitudinal differences across work status. However, Conway and Briner used the psychological contract framework for understanding work attitudes and behaviours in employee – organization relationships of part-time and full-time workers. Hence, this study contributes to contract research by the finding that the absence of a significant moderating effect also holds for employee – co-worker relationships in teams across permanent and temporary workers. That means in effect that the motivational mechanism of psychological contract beliefs is almost similar in both contexts across work status. From an HRM perspective is the similarity in the relationships between psychological contract beliefs and work outcomes a blessing, because it facilitates management of both employee groups in the work team or organization. For permanent and temporary workers in teams, it is a good option for HR practices to invest in team psychological contracts, i.e., clarifying team obligations and legitimate justifications when teams are not able to fulfil their part of the contract.

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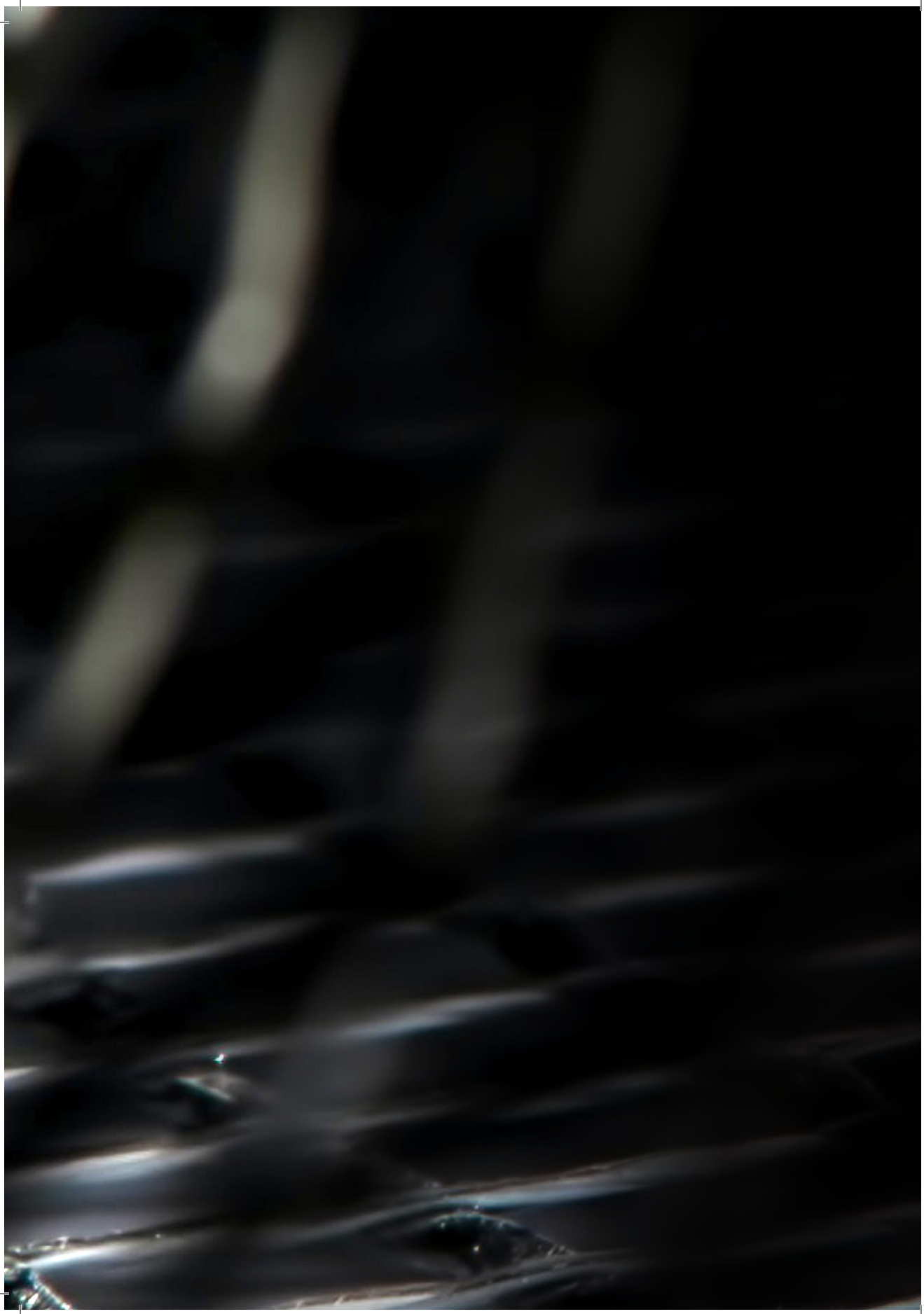

CHAPTER 7

Perceptions of HPWS and performance: cross-level effects of team psychological contracts[7]

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Abstract

The present study aims to examine how experiences of high-performance work systems (HPWS) in work teams affect employee's work attitudes and performance. At the team level, the study explored the role of supervisory support in the relationship experienced HPWS-team performance. In explaining employee attitudes and behaviours at the individual level, such as organizational citizenship behaviour (OCB), the study adopted a psychological contract approach. The focus on the employee perspective of HPWS, the factor-analytic approach of measuring HPWS experiences and the role of team psychological contracts in employee attitudes and behaviours represent the main contributions of this study to HR research. Results indicate partial mediation of fulfilment of psychological contracts in work teams in the experienced HPWS-OCB relationship. At the team level, supervisory support perceptions moderate the effects of shared experiences of HPWS on product and service innovation in work teams.

Keywords: team psychological contracts, multilevel mediation, moderation, HPWS

Introduction

Research has suggested that a high-performance work system (HPWS) can help organizations to become more effective and achieve competitive advantages (Bowen & Ostroff, 2004). HPWS refers to a group of internally coherent and consistent human resource (HR) practices (Zhang et al., 2018) that are designed to enhance employee competence, motivation, and commitment (Datta et al., 2005). Empirical studies in HRM have shown that the implementation of HPWS in organizations is associated with various desirable outcomes, such as lower employee turnover rates (Huselid, 1995), more organizational citizenship behaviour (Kehoe & Wright, 2013), higher productivity of employees (Datta et al., 2005), increased organizational commitment and job satisfaction (Korff et al., 2017; Messersmith et al., 2011) and better organizational performance (Combs et al., 2006; Jiang et al., 2012).

However, HRM research has for a long time been primarily focussed on the management perspective of HPWS, ignoring the role of individual employees' actual experiences with these systems (Liao et al., 2009). Meta-analysis has shown that most studies in the last thirty years of HRM research uses the organization as unit of analysis and managers as respondents (Boon et al., 2019). HPWS was often operationalised in terms of what managers or organizations say they do as formal HR practices and reflect organizational intentions with HR practices. In addition, HRM researchers have taken a holistic view of employment (Lepak & Snell, 1999) by assuming one configuration of HPWS for all employees in an organization. However, this view does not reflect reality as organizations centralise or standardise certain HR practices, while customising and targeting other HR practices (Lepak & Snell, 2002) to different employee groups as part of their strategic orientation to HRM (Miles & Snow, 1984). The logic of different implementation of HR practices across groups is that modifying the scope of HR investments maximise the expected contributions to competitive success. For example, to retain employee groups with highly valuable and unique skills, the organization would likely invest heavily in training and development (Koch & McGrath, 1996), but also encourage participation and organizational commitment. Conversely, temporary workers are of neither strategic value nor unique for an organization (Lepak & Snell, 2002). HR practices will then be focussed on the short-term transactional elements (Rousseau, 1995b) of employee contracts and to ensure employee's compliance with rules, regulations and standards (Lepak & Snell, 1999).

From the employee perspective of HPWS, different employee groups do not have identical experiences of HR practices and these experiences may not necessarily match with the HR practices as intended by the organization. Furthermore, even within the

same employee group, employees may be treated differently by the organization (e.g., earning differences between woman and man in the same staff positions) or have different experiences of HR practices. As noted by Guzzo and Noonan (1994), HR practices communicate messages constantly and in unintended ways, and messages can be "understood quite idiosyncratically; that is, two employees may read the same practice differently" (p. 447). However, work is increasingly organised around teams (Kozlowski & Bell, 2013), in which employees work together to achieve work objectives. Social referents and social influence in teams (Ho & Levesque, 2005) shape employee's understanding of their HR experiences. As employees in teams interact frequently, the continuously social interaction in teams will strengthen or weaken experiences of HR practices. Over time, a shared understanding of HR experiences will emerge. Thus, in organizations one may expect individual experiences of HPWS, shared understanding of HPWS in teams and differences in HPWS between employee groups.

The central purpose of this study is to examine how individual experiences of HPWS and shared understanding of HPWS in work teams affect work attitudes and performance. At the team level, it is suggested that team managers enacting HR practices and engaging in leadership behaviour (Purcell & Hutchinson, 2007) in their work teams may foster stronger relationships among shared understanding of HR practices and team performance. When team managers are visible in implementing HPWS or promote high-quality exchanges with employees, team managers create a strong organizational climate (Bowen & Ostroff, 2004) among team members concerning the work environment (Pak & Kim, 2018).

In explaining individual attitudes and behaviours, the study adopted a psychological contract approach. Psychological contracts - "an individual's belief regarding the terms and conditions of an exchange agreement between that focal person and another party" (Rousseau, 1989, p.123) - are increasingly seen as an important framework for understanding employment relationships (Zhao et al., 2007). Although traditionally applied in employee - employer relationships, the framework can easily be adapted to describe relationships in work teams and predict attitudes and behaviours. In the sections below, it is suggested that a more intense implementation of HPWS in the team from the employee perspective will convert in higher levels of psychological contract fulfilment, which in turn relates to enhanced individual in-role and extra-role performance.

Although there is a substantial volume of research examining the link between HR practices and performance in organizations, this study contributes to the HRM literature by its focus on employees and their work teams as units of analysis. By exploring the

effects of supervisory support and psychological contract beliefs in work teams, the study gives HR practitioners a better understanding of team dynamics in HR perceptions and its relationships with work outcomes.

As depicted in Figure 7.1 below, the study takes a multilevel perspective by examining the cross-level relationships of shared understanding of HPWS in teams on psychological contracts and outcomes at the individual level.

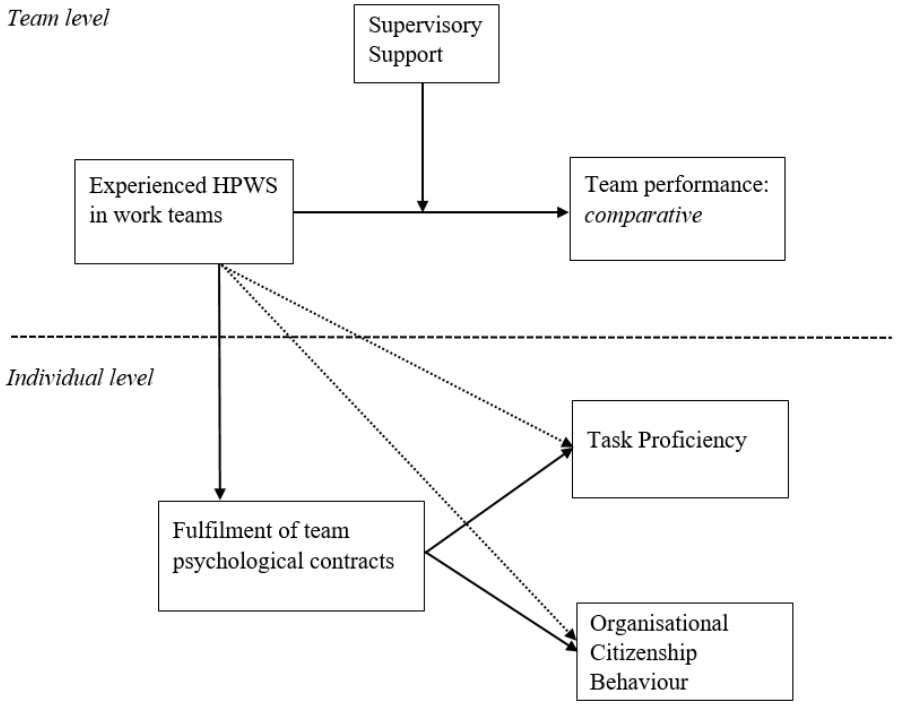

Figure 7.1: Conceptual model

Theoretical Framework

HR practitioners have done many empirical efforts to demonstrate their value for organizations (Wright et al., 2005). In response to the claims that HRM does not contribute to added value, numerous studies have attempted to show positive relationships between HR practices and various measures of performance. In an overview of 104 empirical studies into the relationships between HR practices and performance, Boselie et al. (2005) concluded that three theories dominated the field: contingency theory, the resource-based view and the AMO framework.

In contingency theory the relationship between the use of specific HR practices and performance is posited to be contingent on organization's strategy (Delery & Doty, 1996). Successful implementation of organization's strategy requires employee's attitudes and behaviours that are consistent with this strategy. Organizations use HR practices as a means for eliciting and controlling those attitudes and behaviours (Jackson et al., 1989) and it is the alignment of strategy and HR practices that allows organizations to perform well.

The resource-based view emerged out of the work of Wernerfelt (1984), Barney (1991) and Conner (1991) and has been developed and applied in HRM by Wright (1994), Lepak and Snell (1999) and others. In the resource-based view organizations have a sustained competitive advantage when they implement "a value creating strategy not simultaneously being implemented by any current or potential competitors and when these competitors are unable to duplicate the benefits of this strategy" (Barney, 1991, p. 102). Resources (e.g., assets, capabilities, processes, information, knowledge) enable organizations to conceive and implement these value-creating strategies and are drivers of performance (see also Conner, 1991). However, to be capable of serving as sustained competitive advantage, resources in the resource-based view must meet four criteria: the resource must exploit opportunities and/or neutralises threats in the business environment; the resource must be rare among competitors, imperfectly imitable and non-substitutable (Barney, 1991). Wright et al. (1994) demonstrated that human resources (i.e., pool of knowledges, skills and abilities of employees) in organizations meet these criteria and has the potential to constitute a source of sustained competitive advantage. However, HR practices are not themselves a source of competitive advantage that leads to higher organizational performance, but HR practices do play an important role. HR practices such as selection, appraisal, training and compensation can be used to attract, identify and retain high-quality employees. But most importantly, HR practices affect employee behaviours and encourage employees to act in the interest of the organization (Schuler & MacMillan, 1984).

Whereas contingency theory and the resource-based view are both situated at the organizational level and are mainly interested in the performance effects of HRM from a business perspective (Paauwe, 2009), the AMO framework (Appelbaum et al., 2000) focuses on the individual level of analysis.

According to the AMO framework, HR practices are expected to influence organizational performance via workforce's ability (e.g., by using appropriate selection, hiring and training instruments), motivation (e.g., by using pay for performance) and opportunity to contribute (e.g., by using teams or suggestion systems) (Gerhart, 2005). Thus,

organizational interests are best served with an HR system that attends employee's interests, namely their skill requirements, motivations and the quality of their job (Boselie et al., 2005).

Research in HRM has predominantly drawn from social exchange theory and human capital theory (Zhang et al., 2019) to explicate the mediating mechanisms in the HPWS - performance links. The relationship between HPWS and the level of collective human capital seems to be relatively straightforward (Takeuchi et al., 2007) as there are several components in HPWS that contribute to achieving this objective. For example, selective recruitment, rigorous staffing, comprehensive training and development activities involved in HPWS all contribute to a higher level of collective human capital in organizations. However, levels of human capital are a necessary condition but not a sufficient condition (Wright et al., 1994, p. 319) for an HPWS-performance relationship. As Huselid (1995), MacDuffie (1995) and Delery & Shaw (2001) noted, it is also important that employees are motivated and empowered to apply their knowledge, skills and abilities on behalf of the organization.

Social exchange theory offers an explanation of attitudes and behaviours of employees and measures indirectly the success of HPWS in achieving motivation and empowerment (see also Wall et al., 2002). For example, employees interpret HR practices such as participative decision making (Zacharatos et al., 2005) and well-designed performance appraisal and reward systems (Whitener, 2001) as indicative of organization's support (Eisenberger et al., 1986) and commitment (Shore & Wayne, 1993) to them. In turn, employees reciprocate these perceptions with appropriate attitudes and behaviours.

In summary, research in HRM has provided plausible theories of why and how HR practice is positive associated with performance in organizations and individual level attitudes and behaviours. These theories, that relate HR practices to performance and employee behaviour have served as a starting point for the conceptual model as shown in Figure 1. However, the focus of this study is on the work team and individual work attitudes and behaviours in teams. This means that adaptations to existing theories and suggested mediation mechanisms are likely to be needed.

Performance in team-based organizations

The increased competitive business environment of organizations has influenced the emergence of teams as the core building blocks (Kozlowski & Bell, 2013) of organizations. Teams enable organizations to combine more rapid, flexible, and adaptive responses with diverse skills, expertise and experience of the workforce. From the HPWS perspective, teamwork and decentralised decision-making are sources of competitive advantage

and enhanced organizational performance. According to Pfeffer and Veiga (1999), team-based organizations are successful because teams "substitute peer-based control for hierarchical control of work" (p. 41). The increased sense of responsibility of working in teams stimulates more initiative and discretionary effort (Morrison, 1996) on the part of the employees. Because the work team is the primary (see Riketta & Dick, 2005) focus of commitment (Becker et al., 1996), the initiative and discretionary effort is observed by other co-workers in the team and reciprocated by applying efforts themselves in order to create equitable exchanges in the team (Bishop & Scott, 2000).

Yet, performance of work teams and individual employees does not stem from HR practices themselves, but rather from discretionary efforts that result from using HR practices. More specifically, as Nishii and Wright (2008) pointed out it is not the intended or the actual implemented HR practices that is associated with attitudes and behaviours (including performance) of employees and teams, but the employee perceptions of those HR practices. As depicted in Figure 7.1, experiences of HPWS affect attitudes and behaviours on multiple levels. Following Bowen and Ostroff's (2004) ideas about strength of HRM systems and climate, we propose relationships between shared experiences of HPWS and team performance and cross-level relationships with individual attitudes and behaviours in teams. Given a desired content of an HRM system, employees interpret the HR practices idiosyncratically and psychological climates (i.e., "the meanings an individual attaches to a work context", Schneider & Reichers, 1983, p. 21) differ. However, HRM systems perceived as high in distinctiveness, consistency and consensus (i.e., strong HRM systems) more likely promote "shared perceptions and give rise to the emergence of a strong organizational climate about the HRM content" (Bowen & Ostroff, 2004, p. 213). Organizational climate is defined by Schneider et al. (2002) as a conceptualization of employee experiences; organizational climate is "employee's shared perception of the policies, practices and procedures that are rewarded, supported and expected" (p. 222). Conceptually, HPWS may be viewed as a strong HRM system comprising of internally coherent practices that send unambiguous reinforcing messages and cues (Messersmith et al., 2011) to employees. From this perspective, work teams in organizations develop differing perceptions of the strength of the HPWS, and these perceptions will likely be shared among employees within the same team exposed to the same system. Each team will reciprocate these shared perceptions with behaviours at the team level.

However, shared climate perceptions develop also in work teams, regardless of the strength of the HPWS. The social influence (Ho, 2005) and continuous interaction (Dabos & Rousseau, 2013) among co-workers in a work team will likely create some uniformity in expectancies regarding desired attitudes and behaviours. When the co-workers perceive the implemented HR practices in the team as distinctive, consistent

and consensual (i.e., a strong HRM system), the social influence and interaction among co-workers will likely produce the "intended" organizational climate and intended behaviours (including performance). Conversely, when the implemented HR practices in the team are perceived more negatively (e.g., various elements of HPWS are either not visible or understandable for everyone in the team) more individual-level perceptions and behaviours develop or may result in unintended organizational climates and behaviours (Bowen & Ostroff, 2004, p. 214).

Features of HPWS in the work team are likely to interact with other factors in the team environment that affects organizational climate. For example, line managers implementing HR practices may foster a positive organizational climate that invites employees to perform when they demonstrate procedural justice (Naumann & Bennett, 2000) or promote high-quality exchanges (Kozlowski & Doherty, 1989) with the co-workers in the team, they foster. Thus, a strong HRM system in the team environment coupled with positive perceptions of manager's attitude and leadership behaviour (Purcell & Hutchinson, 2007) may foster stronger relationships among HPWS (climate) and performance at the team level. In the moderation hypothesis below, supervisory support reflects the role of manager's attitudes and behaviours in the relationship experienced HPWS in work teams - team performance.

H1: Perceptions of supervisory support in work teams strengthen the relationship between shared perceptions of HPWS and team performance.

HPWS and the role of psychological contract beliefs in work teams

HR practices communicate messages and cues with regard to behaviours that are expected, supported and rewarded by management (Nishii et al., 2008). In this study, we argue that by decoding and interpreting these messages and cues employees derive meaning of HR practices vis-à-vis their psychological contract.

As psychological contracts are in the "eye of the beholder" (Rousseau, 2001, p. 534), psychological contracts refer to agreement perceptions about the inducements and contributions of the parties that are involved in the contract. In a general sense, almost any type of communication or behaviour (Conway & Briner, 2005) from the organization or employee can be interpreted by the other party as information about the terms of the psychological contract.

However, in organizations there are many contract makers (Rousseau & Greller, 1994), both human (e.g., recruiters, managers, co-workers) as administrative (e.g., training, compensation systems, benefits, personnel manuals)(Rousseau, 1995a) that

communicate promises and commitments (Guest & Conway, 2002) to employees and what is expected in return. Although HPWS is designed to send consistent messages and cues to employees with the objective of favourable interpretations of contract terms, it does not guarantee that everyone in a work team perceive that the mutual obligations in their individual psychological contracts are fulfilled. Psychological contracts are idiosyncratic; perceptions of content and fulfilment of psychological contracts differ among employees. Pre-employment and personal non-work experiences (Conway & Briner, 2005), differences in personality (Raja et al., 2004), cognitive bias (Rousseau, 2001), exchange- and creditor ideologies (Coyle-Shapiro & Neuman, 2004) are all factors that influence individual contract perceptions. Thus, even if an organization offers the same HPWS to every employee, psychological contract perceptions would still vary widely. Furthermore, mixed messages of the multiple contract makers (e.g., line managers, co-workers) and misalignment among HR practices (Rousseau & Greller, 1994) would probably lower fulfilment perceptions or induce experiences of psychological contract violation (Morrison & Robinson, 1997).

In teams individual contract perceptions do not exist in a vacuum. As Hackman et al. (1992) demonstrated, teams are very influential in making sense of the work environment. For example, teams act as gatekeepers of information (Guzzo & Noonan, 1994) regarding HPWS, as sounding boards of opinions, and as sources of explanation and evaluation. Employee's turn to co-workers in the team to validate their perceptions of the degree to which promises are met in the HRM domain.

However, as employees work together in the achievement of team objectives psychological contracts between co-workers in the team develop. When employees perceive that co-workers exert enough effort to achieve desired outcomes as a result of inducements of HPWS, thereby fulfilling psychological contracts, employees attempt to restore the balance (Blau, 1964) in their team relationships by contributing more to the team, displaying effective in-role performance and extra-role behaviours. Thus, we expect a mediating effect of employee's perception of fulfilment of team psychological contacts in the relationship between team-level HPWS and individual performance. The mediating effect of team fulfilment perceptions is presumed to be partial, because employees also pick up and internalise attitudes and behaviours of co-workers in the team through social cues (Salancik & Pfeffer, 1978). The interactions with and observations of co-workers in the team may result in copying and imitating HRM-induced behaviours, implying direct relationships between team-level HPWS and individual performance.

In the partial mediation hypotheses below, we focus on task proficiency and organizational citizenship behaviour (OCB) among several possible indicators of individual performance. We used task proficiency as indicator of in-role performance, because meeting role expectations and formal requirements appropriately represents the effectiveness of employees in the performance of their tasks. OCBs refer to employee behaviours going beyond the formal requirements of the job description (Organ, 1997). Only OCBs directed to individuals (McNeely & Meglino, 1994) are included in this study as indicators of extra-role performance, because discretionary behaviours such as helping co-workers, listen to co-worker's problems and worries and taking interest in others (Williams & Anderson, 1991) collectively promote the effective functioning (Organ, 1988) of teams.

Therefore, we hypothesise the following:

H2: The relationship between the team-level HPWS and task proficiency and individual performance is partially mediated by fulfilment of team psychological contracts.

H3: The relationship between team-level HPWS and organizational citizenship behaviour is partially mediated by fulfilment of team psychological contracts.

Method

Population and sample

The data of this study were collected by student researchers following a strict protocol. Employees and team managers completed questionnaires in English or Dutch language about their working environment and the relationships with experiences and perceptions. The English scales in the questionnaires were translated in Dutch via double-back translation (Brislin, 1980). The final sample size consisted of 519 employees working in one of 116 work teams. More than half of the employees in the sample were female (55.1%). 39.1% of the employees have General Secondary Education as the highest educational level, 28.6% has a Bachelor degree and 15.1% a Master degree or PhD. Mean age of the employees was 37 years (SD = 13.6); team managers in the sample 42 years (SD = 11.3). Employees had on average 9.6 years (SD = 10.4) of working experience in their organization and 5.9 years in the current work team.

On average 25 employees are employed in the work unit of the team managers in the sample. The mean organizational tenure of the managers in the sample was 11.8 years (SD = 9.3). 33.9% of the managers worked in large organizations (> 1000 employees),

14.8% in SME's (< 25 employees). The largest group of managers are employed in commercial organizations (22.1%). The remainder of the manager group was employed as staff in a diverse range of sectors (e.g., health care 11.5%, professional services 10.6%).

Measures

Experienced High-Performance Work Systems in teams. To measure (shared) understanding of HPWS in work teams, we used a 15-item HPWSI (i.e., HPWS intensity) scale developed by Pak and Kim (2018). The conceptualization of Pak and Kim is well aligned with the AMO framework in terms of the contribution of HPWS in enhancing organizational functioning by increasing human capital, motivation and opportunity to contribute. Examples of the scale items are "I think that selection here emphasizes an individual's ability to collaborate and work in teams", "I have been provided with extensive training programs", "My performance appraisals emphasize long-term and group-based achievement" and "I am provided the opportunity to suggest improvements in the way things are done". The items are scored on a 5-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree".

With CFA, we compared the fit of a three-factor model according to the AMO framework of Ability, Motivation and Opportunity with alternative factor-structures. The goodness-of-fit of the three-factor model was good: CFI = .960, RMSEA = .060, SRMR = .0489, with relatively low correlation between the factors (r < .50). The internal consistency of the Ability, Motivation and Opportunity subscales is satisfactory (i.e., Ability α =.86; Motivation α =.73; Opportunity α =.69).

Supervisory support. Supervisory support was measured with a three-item scale adapted from Peccei and Rosenthal (2001). The construct refers to the extent to which employees perceive their immediate supervisor to be supportive and participative in his or her behaviour. An example item of this scale is "My immediate supervisor supports me in getting my job done". The three items are scored on a 5-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree". The internal consistency of the scale meets the threshold (α =.70).

Team performance: comparative. Performance is rated with subjective measures of operational performance (i.e., productivity employees, quality of goods and services, customer satisfaction, product- and service innovation) and employee absenteeism and turnover. Findings demonstrate convergent, discriminant and construct validity of subjective measures of performance judged against their objective counterparts (Wall et al., 2004). In the surveys team managers were asked to rate the performance of their work unit in comparison with other units (Guest & Peccei, 2001; Ramsay et al., 2000) for

the above-mentioned performance indicators. Answer categories for the operational performance indicators ranged from 1 "much worse", 3 "about the same" to 5 "much better". For employee absenteeism and turnover, the answer categories ranged from 1 "much lower", 3 "about the same" to 5 "much higher".

Psychological contracts in work teams. To measure psychological contracts in the team context we used a horizontal psychological contract (HPC) scale developed by Schreuder et al. (2017). In these scale, perceptions of mutual obligations (i.e., mutuality) and perceptions of the degree of balance in the fulfilment of those obligations (i.e., reciprocity) are separated to determine their relative effect.

The HPC scale comprises 15-items like "… the team would take your interests into account when making decisions." or "… the team would help you to get your job done". In this study, we used only the reciprocity aspects of this scale. The items are rated on a 6-point scale ranging from 0 "No, not at all", 3 "Yes, and promise fully kept" to 5 "Yes, but I received much more than promised". The scale showed good internal consistency (α = .95).

Task Proficiency. To measure individual in-role performance, we included 3 items measuring task proficiency. Task proficiency describes the degree to which an individual meets role expectations and requirements that can be formalized (Griffin et al., 2007). Employees were asked to rate how often they had carried out the behaviour over the past month on a scale ranging from 1 "never" to 5 "always". An example item of this 3-item scale is "Carried out the core parts of the job well". The scale showed good internal consistency (α =.85).

Organizational Citizenship Behaviour. This construct was assessed with the individual focused items of Lee and Allen (2002). Examples of these items are "I help others who have been absent" and "I express loyalty towards the organization". Answer categories ranged from never (1) to always (7). In the original scale, Lee and Allen (2002) conceptualized extra-role behaviour in terms of the intended target or beneficiary of the citizenship behaviour. They distinguished two types of OCB, as earlier suggested by Williams and Anderson (1991) and Organ (1997); citizen behaviours directly intended to benefit the organization (OCB-O), and those directed to individuals (OCB-I). They argued that OCB-O is likely a direct function of employee's beliefs about their work characteristics, while OCB-I, primarily helping individuals at work, reflects a "natural expression of employees' affect at work" (p. 133). In the present study, only the items of the OCB-I dimension were used (α = .78).

Controls. At the individual level, we controlled for gender and age of employees. At the team level, number of employees employed in the work unit of the team manager (i.e., size of the work unit) and type of organization (e.g., business, hospitality, education, financial institutions) were included as controls in the analysis. In particular, type of organization can be considered as an important element of the organizational context (Toh et al., 2008) that shapes HR architecture.

Data Aggregation

To justify aggregation of individual level scores to represent experienced HPWS and perceived supervisory support at the team level (Chan, 1998), we calculated within-team interrater agreement statistics, $r_{wg}(J)$ (James et al., 1993), and intraclass correlation indices ICC(1) and ICC(2) (Bartko, 1976). The mean $r_{wg}(J)$ for experienced HPWS, using a uniform null distribution, was .95 (SD =.09) indicating very strong agreement (LeBreton & Senter, 2008). ICC(1) and ICC(2) were calculated from a one-way random effects ANOVA (McGraw & Wong, 1996). The results showed a significant F-statistic ($F = 2.91$, $p < .001$), and acceptable ICC values (i.e., ICC (1) = .30; ICC (2) = .66), indicating that data aggregation could be justified (Klein & Kozlowski, 2000). Similarly, we calculated rwg(J), ICC (1), and ICC (2) for supervisory support; the values were .82, .17, and .49, respectively ($F = 1.94$, $p < .001$).

Analysis Strategy and Validity of the Study Variables

The study variables were screened for missing values. All variables had none or a small amount of missing values (< 5%). For the scale (continuous) variables with a low rate of missing values, the mean was imputed, for ordinal variables the median. The skewness and kurtosis of the indicators was measured to assess normality.

To confirm convergent and discriminative validity of the key study variables, we conducted a confirmatory factor analysis (CFA). The model with experienced HPWS measured by three factors (i.e., ability, motivation and opportunity) showed a slightly better goodness-of-fit to the data than an alternative model with experienced HPWS included as one separate factor: CFI = .929, RMSEA = .053, SRMR = .0472 in conjunction with acceptable values of reliability, convergent validity and discriminant validity of the factors (i.e., Composite Reliability (CR) > .70, Average variance extracted (AVE) > .50, Maximum Shared Variance (MSV) < Average variance extracted). A chi-square difference test of the unconstrained and the fully constrained model detected some common method bias (Podsakoff et al., 2003): $\Delta X^2 = 222.62, \Delta df = 34, p < .001.$ To control for this bias, the shared variance was extracted from the scores by adding a common (latent) factor to the model and the results imputed in the regression and multilevel mediation models.

For the OLS regression models at the team level, additional collinearity diagnostics were computed. The largest variance inflation factor (VIF) observed in the data was about the cut-off value (i.e., 4.193).

Results

Table 7.1 presents the means, standard deviations, and correlations for all study variables. As expected, significant correlations are found at the team level between the ability, motivation and opportunity aspects of HPWS. The ability aspects of HPWS as experienced in work teams were positively correlated with the motivation aspects ($r = .319$; $p < .01$) and opportunity aspects ($r = .350$; $p < .01$), confirming the coherent and consistent nature of HPWS.

Perceptions of supervisor support in work teams correlated significantly with the AMO aspects of experienced HPWS; ability ($r = .295$; $p < .01$), motivation ($r = .299$; $p < .01$), opportunity ($r = .445$; $p < .01$). In addition, cross-level correlations showed significance for the relationships between fulfilment of team psychological contracts and the ability ($r = .204$; $p < .01$), motivation ($r = .291$; $p < .01$) and opportunity ($r = .210$; $p < .01$) aspects of experienced HPWS. At the individual level, fulfilment of team psychological contracts was positively correlated with organizational citizenship behaviour (i.e., OCB-I) ($r = .203$; $p < .01$). The relationship with task proficiency was non-significant in the sample, while there was significant positive correlation between task proficiency and organizational citizenship behaviour ($r = .285$; $p < .01$).

Table 7.2 presents the results of the hierarchical regression analyses predicting subjective measures of comparative team performance. Please note that the non-significant regression models were omitted from the Table (i.e., manager reports of customer satisfaction, employee absenteeism and turnover).

Size of the work unit correlated significantly negative with perceived productivity of employees ($\beta = -.226$; $p < .05$), while organization type is significantly related to quality perceptions of goods and services ($\beta = .204$; $p < .05$). The ability aspects of experienced HPWS negatively associated with perceptions of goods and services quality ($\beta = -.358$; $p < .01$) and product and service innovation ($\beta = -.277$; $p < .10$). However, the motivation aspects of experienced HPWS affect both subjective measures of performance positively ($\beta = .510$; $p < .001$ and $\beta = .289$; $p < .10$ respectively), while the opportunity aspects of experienced HPWS is significantly related to perceptions of employee productivity ($\beta = .368$; $p < .05$) and quality of goods and services ($\beta = .427$; $p < .05$).

Table 7.1: Means, Standard Deviations, and Zero-Order Correlations.

Variable		M	SD	Level	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Gender	1.55	--	1	--																
2.	Age	37.71	13.60	1	-.041	--															
3.	Size work unit	25.08	25.28	2	-.038	.089*	--														
4.	Organisation type	7.52	--	2	.076	.119**	.011	--													
5.	Ability	3.25	.56	2	-.101*	.143**	.108*	.137**	--												
6.	Motivation	2.85	.61	2	-.115**	.039	-.012	-.040	.319**	--											
7.	Opportunity	3.54	.68	2	-.205**	.035	-.034	.102*	.350**	.243**	--										
8.	Supervisor support	3.55	.70	2	.003	-.091*	-.027	.053	.295**	.299**	.445**	--									
9.	Productivity employees	3.63	.71	2	-.062	-.056	-.258**	.096*	.118**	.150**	.172**	.107*	--								
10.	Quality of goods and services	3.59	.60	2	-.055	-.035	-.090*	.248**	.168**	.234**	.220**	.166**	.498**	--							
11.	Customer satisfaction	3.69	.75	2	.032	-.039	-.091*	.099*	.025	.074	.116**	.080	.438**	.523**	--						
12.	Product- and service innovation	3.28	.77	2	-.040	-.139**	-.114*	.012	.046	.096*	.089*	.132**	.328**	.509**	.378**	--					
13.	Employee absenteeism	2.66	1.04	2	-.013	-.078	-.118**	-.029	-.041	.006	-.048	.020	.039	-.031	.040	-.088*	--				
14.	Employee turnover	2.63	.94	2	-.004	-.041	.048	-.042	-.014	.002	-.132**	-.006	-.112*	-.145**	-.173**	-.055	.581**	--			
15.	PCF	2.70	1.11	1	-.037	-.111**	.013	.032	.204**	.291**	.210**	.260**	.075	.176**	.059	.214**	-.072	-.093*	--		
16.	Task proficiency	5.58	.87	1	.058	.062	.021	.053	.045	.007	.017	.059	-.022	.010	.065	.109*	-.049	-.038	.075	--	
17.	OCB-I	5.03	.97	1	-.022	.015	-.008	.031	.139**	.105*	.150**	.112**	.079	.007	-.041	-.002	-.058	-.061	.203**	.285**	--

Notes. PCF = psychological contract fulfilment. * Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed)

Table 7.2: Effects of team-level HPWS on subjective measures of team performance.

Variables	Productivity of employees			Quality of goods and services			Product and service innovation		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Size of the work unit	-.271**	-.252**	-.226*	-.128	-.108	-.099	-.148	-.129	-.124
Type of organisation	.095	.062	.021	.238*	.198*	.204*	.022	-.001	.018
Ability		-.089	-.178		-.254*	-.358**		-.171	-.277†
Motivation		.153	.233		.399**	.510***		.217	.289†
Opportunity		.230*	.368*		.241*	.427*		.167	.210
Supervisory support			-.140			-.248			-.069
Ability x support			-.152			-.134			-.242*
Motivation x support			.056			.268†			.583***
Opportunity x support			.230†			-.095			-.286*
R^2	.083	.169	.226	.073	.268	.300	.022	.090	.222
ΔR^2	.083	.087	.056	.073	.194	.032	.022	.068	.132
ΔF	4.902	3.695	1.859	4.240	9.184	1.147	1.222	2.595	4.227

Notes. Only the effects of significant moderation models are depicted. n = 116 teams.
Table entries: standardised regression coefficients and significance.
† p < .10, *p < .05, **p < .01, ***p < .001

Significant effects of perceived supervisory support are found in the dataset in combination with one or more experienced HPWS dimensions. For example, the interaction effects of supervisory support are all significant in the product and service innovation model (ability β = -.242; p < .05, motivation β = .583; p < .001, opportunity β = -.286; p < .05), while in the (labour) productivity model only the interaction effect of supervisory support for opportunity is significant (β = .230; p < .10). The analyses indicate the importance of other factors than experienced HPWS and supervisory support in the subjective assessment of team performance (r^2 is relatively low; $r^2 \leq .30$).

With regard to hypothesis 1, the data indicated significant interaction effects of supervisory support in the product- service innovation model. Simple slope analyses revealed that the effects of supervisory support perceptions in this model are in the predicted direction for the ability and motivation aspects of HPWS. Refer to Figures 2 and 3 below for the interaction patterns in this model. In the employee absenteeism and turnover models, no significant moderating effects are found.

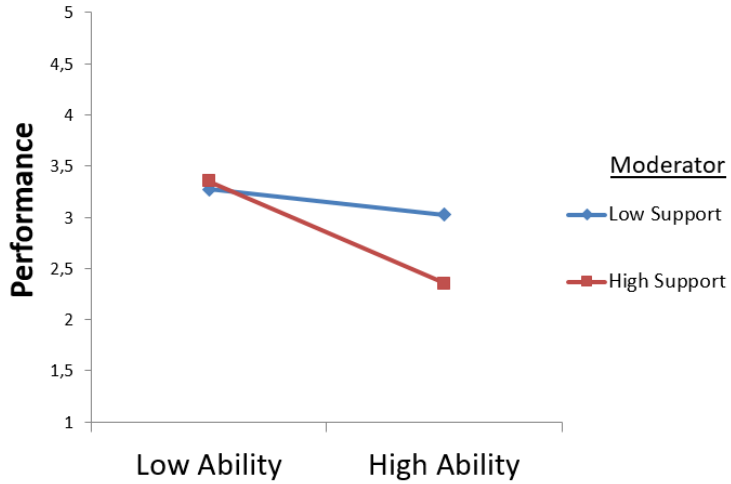

Figure 2. Interaction between supervisory support and the ability aspects of HPWS on product and service innovation in work teams

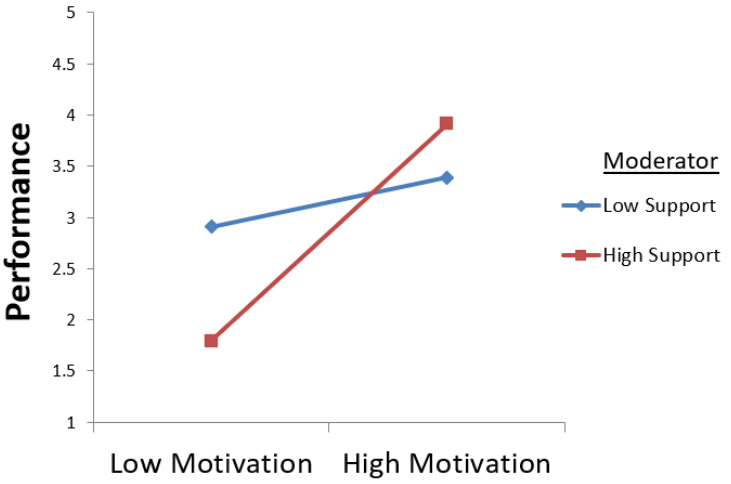

Figure 3. Interaction between supervisory support and the motivation aspects of HPWS on product and service innovation in work teams

We used Rockwood and Hayes's (2017) SPSS macro for multilevel mediation to perform the partial mediation analyses of hypotheses 2 and 3. To test the heterogeneity in the strength of indirect effects (Bauer et al., 2006), for every dimension of experienced HPWS a mediation model with random intercepts is compared with a mediation model with random intercepts and slopes (see also Aguinis et al., 2013).The results are shown in Table 7.3 below.

Table 7.3

	Restricted model		**Unconstrained model**		**Difference**	
Experienced HPWS	-2 Log Likelihood	AIC	-2 Log Likelihood	AIC	X^2	p
Multilevel mediation model for task proficiency						
Ability	2760.558	2768.558	2757.211	2769.287	3.347	.188
Motivation	2711.354	2719.354	2708.771	2720.771	2.583	.275
Opportunity	2724.421	2732.421	2722.519	2734.519	1.902	.386
Multilevel mediation model for OCB-I						
Ability	2923.523	2931.253	2920.907	2932.907	2.616	.270
Motivation	2875.917	2883.917	2875.016	2887.016	.901	.637
Opportunity	2856.456	2864.456	2855.542	2867.542	.914	.633

Notes: The difference in -2 Log Likelihood for two nested models has a chi-square distribution, with degrees of freedom equal to difference in the number of parameters estimated in the two models (see Heck et al., 2013)

The results indicate that models with random intercepts and slopes do not significantly improve the model's fit. However, Akaike information criterion (AIC) is slightly lower for the more restricted models of random intercepts only. Thus, mediation by psychological contract fulfilment in teams should be measured in a random intercept design (i.e., a multilevel model reflecting differences in task proficiency and OCB-I across work teams). Zhang et al. (2009) argue that if the independent variables in multilevel mediation models are level-2 predictors, only between-groups indirect effects may be of interest. A between-group indirect effect is the effect of group differences in X on Y through M. However, researchers should report results at both levels of analysis, regardless of the level at which the effect should theoretically exist.

In Table 7.4 below the results of the multilevel mediation models are separated in within-group and between-group components. 95% Monte Carlo confidence intervals are displayed to test the significance of indirect effects. The Monte Carlo confidence interval is a more reliable test for indirect effects because it does not assume normal distributions of indirect effects. However, the p-values in the table reflect normal-theory.

Table 7.4

	Within-group indirect effect		**Between-group indirect effect**	
Experienced HPWS	Estimate	95% CI	Estimate	95% CI
Multilevel mediation model for task proficiency				
Ability	.0269*	[.0032 .0550]	.0184	[-.0034 .0534]
Motivation	.0324	[-.0170 .0850]	.0459	[-.0248 .1314]
Opportunity	.0443*	[.0067 .0868]	.0782	[-.0244 .1929]
Multilevel mediation model for OCB-I				
Ability	.0617**	[.0283 .1022]	.0313	[-.0022 .0758]
Motivation	.0983**	[.0361 .1692]	.0993*	[.0248 .2002]
Opportunity	.0639**	[.0186 .1168]	.1025*	[.0083 .2143]

Notes: † p < .10, *p < .05, **p < .01, ***p < .001

As reflected by the lack of significance of the model estimates, psychological contract fulfilment does not mediate the relationships between the perceptions of ability, motivation and opportunity of present HR practice and task proficiency. Therefore, Hypothesis 2 must be rejected. However, the random intercepts model indicates individual level (i.e., Level-1) mediation of psychological contract fulfilment for the ability and opportunity perceptions of HR practice, but this result was not hypothesized (ability: $\beta = .0269$, $p < .05$; opportunity: $\beta = .0443$, $p < .05$).

The multilevel mediation model for organizational citizenship behaviour (i.e., OCB-I) shows similar individual level mediation effects of psychological contract fulfilment, but also significant between-group estimates of motivation and opportunity HR perceptions. This indicates that shared perceptions of motivation and opportunity aspects of HPWS creates variation across teams in citizen behaviours of individual employees, through their effect on contract fulfilment.

The mediation through psychological contract fulfilment is only partial. After controlling for fulfilment of team psychological contracts, the relationship between shared perceptions of motivation and opportunity aspects of HPWS and citizenship behaviours-maintained significance (motivation direct effect: $\beta = .3251$, $p < .01$; opportunity direct effect: $\beta = .4288$, $p < .001$). Therefore, hypothesis 3 is supported by the data.

Discussion

While numerous studies in HRM have been focussed on the relationships between bundles of HR practices and various measures of performance in organizations, this study has extended this research to the level of work teams. The main finding of this study is that the measurement of experienced levels of various components of HPWS in work teams predicts operational performance (e.g., productivity, quality of service, innovativeness) of teams as well as individual performance. The choice not to use a single comprehensive measure to analyse the set of HR practices in HPWS, as Pak & Kim (2018) did in their study following Becker & Huselid (1998), provided more detailed information about the effects of experienced HR practices on performance. For example, the ability components of experienced HPWS are negatively associated with perceived service quality in comparison with other work teams, while the motivation and opportunity aspects affect quality perceptions positively. In addition, there are differences in the cross-level effects on task proficiency and OCB-I.

To enhance performance of the work teams and increase pro-active behaviours, HR practitioners could organise surveys on a regular basis measuring experienced HPWS in teams and analyse the effects of its components. The valuable information of these surveys might help HR practitioners to implement cost-effective human resource architectures. Thus, to reach the strategic objective of higher levels of service quality, the results of this study indicate that changes in the performance appraisal system (i.e., motivation) and increasing the available opportunities for employee participation (i.e., opportunity) would be effective.

This study derived the components of experienced HPWS empirically with analysis results well aligned with the AMO framework. The approach adopted would deliver more detailed support for HR practitioners in re-designing team-based HR architecture by increasing the number of items and rewriting existing ones. Multiple previous studies on HPWS provide potential items for this extended scale, such as Takeuchi et al.(2007), Lepak & Snell (2002), Kehoe &Wright (2013), Gardner et al. (2011) , Sun et al.(2007) and Messersmith et al. (2011).

The results obtained indicate significant interaction effects of perceived supervisory support in the product- and service innovation model. It appears that these perceptions contribute to a stronger organizational climate and increase team innovativeness in comparison with other work teams. As observed in the employee sample, supervisory support is also significantly associated with perceptions of psychological contract fulfilment in work teams (i.e., a cross-level effect not included in the model; $r = .260$, $p < .01$). To further strengthen organizational and psychological climate, HRM should offer training programs to supervisors to help them to communicate more effectively the intended ability, motivation and opportunity aspects of HR practices in their work teams. The recruitment and selection of new supervisors could be adapted to accommodate leadership styles and behaviours that maximise support perceptions. With regard to team psychological contracts, by supporting the developmental needs of employees (i.e., developmental HRM; Bal et al., 2013) team managers could reshape psychological contracts in their work teams to more relational and less transactional. As noted by Rousseau (1990; 1993) and MacNeil (1985) relational contracts are based upon exchanges of both monetizable elements (e.g., pay for services) and socioemotional elements (e.g., loyalty, support, security) and have an open-ended, long term time frame. Through reshaping the focus of team psychological contracts, the increasing ability and motivation to perform as a result of HRM in the work team will be more effective.

The present study has some limitations which limits the generalisability of the findings. First, the perceptions and the performance measures are largely self-reported and cross-sectional. This implies that it is very difficult to conclude which causal sequences are plausible and which are not (Taris & Kompier, 2006). In other words, the sampling design of the present study did not allow to reach decisive conclusions about the causation between the perception and performance variables. However, the use of multi-source data has certainly reduced common rater effects (Podsakoff et al., 2003) at the team-level. Second, the multiple regression models at the team level implicitly assumed linearity or additivity in the AMO framework. This means, for instance, that the motivation aspects in the HPWS perceptions does not correlate (significantly) with the ability and opportunity aspects and vice versa. Although Table 7.1 has shown significant correlations, the results of the "Analysis strategy" section has not prohibited the use of OLS regression and Rockwood's multilevel mediation models. Future research is needed to develop alternative models for HPWS perceptions in teams with strong predictive value for performance and contract fulfilment.

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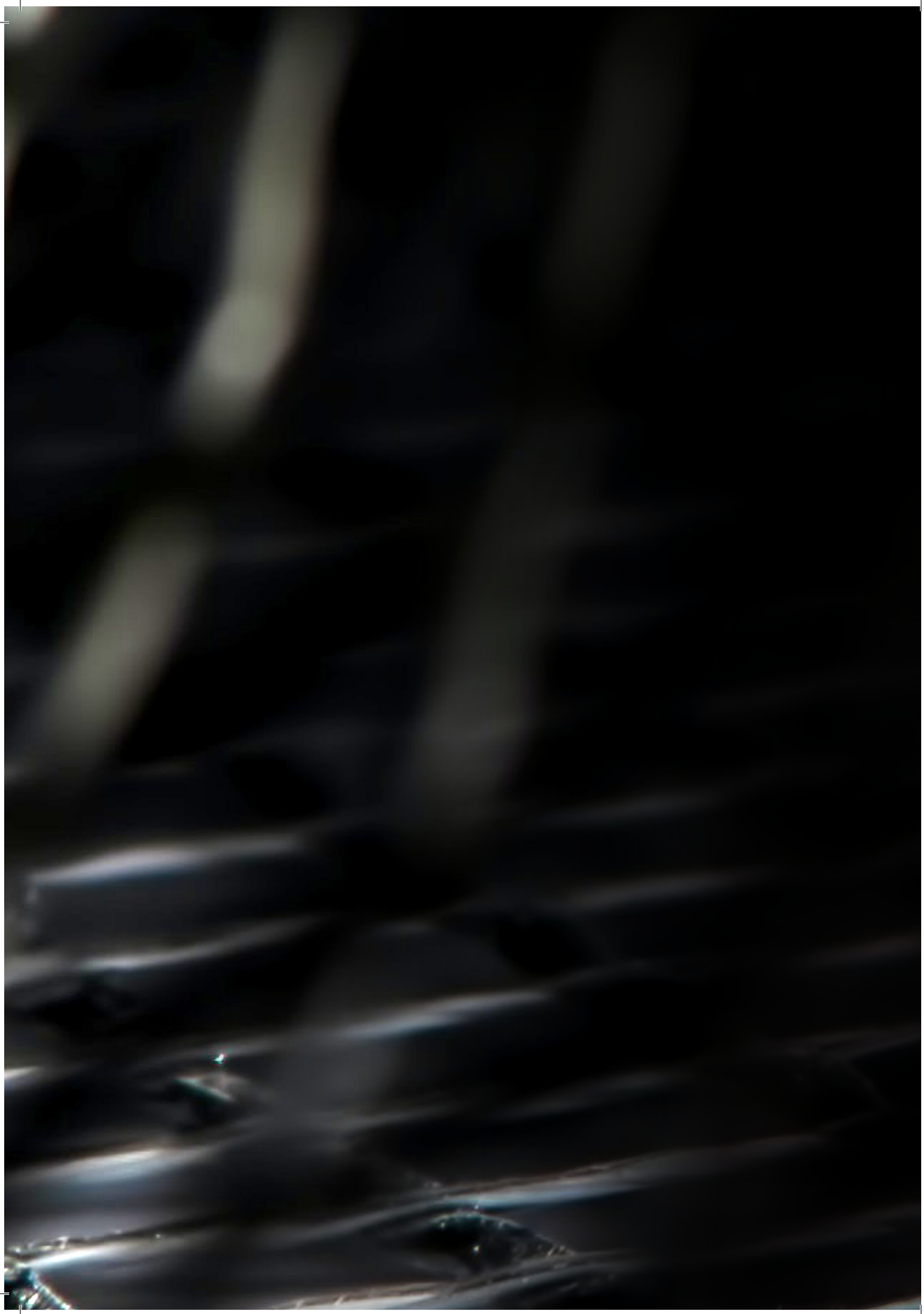

CHAPTER 8

Conclusion and discussion

In developing and enhancing excellent service quality, service companies and marketing management scholars acknowledge that the service-mindedness and customer-oriented behaviours of frontline employees and employees in support functions are critical.

To implement a successful strategy of excellent service, a straightforward adoption of a coherent system of HR practices that ensures that employees have the competencies as well as the motivation to meet customer needs appears to be insufficient. This dissertation suggests that employee perceptions of relationships with co-workers, often operating in work teams, is not a negligible factor in the service-mindedness and customer-oriented behaviours of employees.

Adopting a psychological contract framework due to its adaptability to non-hierarchical employee relationships and its predictive value of employee attitudes and behaviours in previous research, a team psychological contract scale was developed that measures both mutuality and reciprocity in co-worker relationships. In addition, the capabilities of the team psychological contract scale was tested in various mediation and moderation models. The models in the empirical studies of this dissertation were designed to address the following overarching research questions.

Research question 1:
Which organizational factors are related to psychological contract beliefs in non-hierarchical co-worker relationships in teams?

Research question 2:
How are psychological contract beliefs in non-hierarchical co-worker relationships related to attitudes and behaviours of employees and teams?

Antecedents of team psychological contracts

In research on psychological contracts, scholars have found support for various organizational factors that affect psychological contract beliefs. For example, empirical evidence shows that psychological contract beliefs in employee-employer relationships are (partly) explained by factors such as employee's initial trust in the employer (Robinson, 1996), employer reneging (Robinson & Morrison, 2000), incongruence between employee and employer perceptions of obligations (Guest & Conway, 2002; Robinson & Morrison, 2000), perceived organizational support (Dulac et al., 2008), procedural justice (Flood et al., 2001; Rosen et al., 2009), job insecurity (De Cuyper & De Witte, 2006; Piccoli & De Witte, 2015), psychological climate (Hartmann & Rutherford, 2015), and experienced job demands and resources (Bal et al., 2017; Vantilborgh et al., 2016). Recently, research on

the antecedents of psychological contract beliefs in employee-employer relationships has been extended to team environments (e.g., Tekleab et al., 2019).

In contrast to traditional contract research, this dissertation has examined the effects of antecedents on psychological contract beliefs in non-hierarchical co-worker relationships in teams (i.e., research question 1). Since existing psychological contract research does not provide a reliable and valid scale to measure those psychological contract beliefs, a new psychological contract scale had to be developed. The development and testing of such an instrument to measure co-worker psychological contract beliefs in team environments represents the main contribution of this dissertation to psychological contract research.

In addition to the development and testing of a psychological contract scale, this dissertation has opened the black box of antecedents of psychological contract beliefs between co-workers in work teams. It has done so, first, by examining organizational factors that influence contract beliefs known from previous research on employee-employer relationships (see above). Although not exhaustive, the empirical studies in this dissertation suggest that some of these antecedents of psychological contract beliefs may also act as antecedents of contract beliefs between co-workers in team environments. For example, ability, motivation and opportunity aspects of implemented high-performance work systems (i.e., HPWS) are interpreted by employees idiosyncratically and derive their meaning vis-à-vis individual psychological contracts. That is, shared perceptions of these aspects in work teams showed significant cross-level correlations with perceived fulfilment of team psychological contracts (i.e., ability $r = .204$; $p < .01$; motivation $r = .291$; $p < .01$; opportunity $r = .210$; $p < .01$).

As the implementation of HR practices may also have implications for (re)design of work, this dissertation examined the effects of perceptions of autonomy and job complexity on psychological contract beliefs in co-worker relationships. The results were mixed; only perceptions of job autonomy correlated significantly with perceived fulfilment of team psychological contracts.

Second, this dissertation has examined two organizational factors, not or rarely studied in previous psychological contract research, as antecedents of psychological contract beliefs.

Triggered by Broschak et al.(2006), the literature review of DeCuyper et al.(2008) and the meta-analysis by Wilkin (2013), this dissertation has examined whether permanent employees and contingent workers evaluate their team psychological contracts

differently. The research findings show that type of employment contract does not significantly affect the content and fulfilment of team psychological contracts.

Goal alignment ('goal congruence') was examined as an antecedent of team psychological contract beliefs. The construct was familiar to the author as an essential feature of an effective management control system. That is, managers and employees working in their own interest take actions that align with the overall goals of top management (see also Horngren et al., 2009; Zhang et al., 2018). Goal alignment in work teams was measured along two factors: alignment in learning goals and alignment in performance goals. Alignment in performance goals significantly predicted shared (i.e., aggregated) perceptions of psychological contract fulfilment, while collective team identification strengthens the (*ns*) relationship between alignment in learning goals and shared perceptions of psychological contract fulfilment.

Consequences of team psychological contracts

Whereas past research on psychological contracts in employee-employer relationships gave relatively little attention to predictors of psychological contract beliefs, the main focus of psychological contract research has been on examining the negative emotional, attitudinal, and behavioural consequences (Griep et al., 2017) of employees' perception of contract breach/violation. Coyle-Shapiro et al. (2019) recently made a summary of empirical studies that demonstrate those negative consequences. Meta-analytic evidence of the consequences can be found in meta-analyses by Bal et al. (2008) and Zhao et al. (2007).

As research question 2 demonstrates, this dissertation has shifted the focus to the consequences of psychological contract beliefs in co-worker relationships. The paragraphs below summarise the research findings of the empirical studies by chapter.

In Chapter 2 a team obligations scale and a member obligations scale were developed and tested in a longitudinal sampling design of student teams. The study confirms that perceptions of team obligations and member obligations are related. Specifically, perceived team obligations in student teams at time 1 relate positively with perceived member obligations at time 2 (β = .235, p < .01). In addition, perceived fulfilment of obligations by co-workers in the team at time 1 related significantly with team commitment at time 2 (β = .451, p < .01).

Chapter 3 studied the relationship between perceived fulfilment of co-worker psychological contracts and work engagement at the team level. Shared (aggregated) perceptions of psychological contract fulfilment related positively with shared employee

engagement in work teams (β = .360, p < .01), although the explained variance was only moderate (14.1%). Furthermore, shared (aggregated) perceptions of fulfilment in co-worker psychological contracts predicted supervisor-rated in-role performance and extra-role behaviours of work teams through its effects on (aggregated) work engagement.

Chapter 4 examined the motivating effects of goal alignment in work teams on work outcomes in a moderated mediation model. Supervisors rated the performance of their work teams in comparison to other teams in their organization on six criteria derived from Wall et al. (2004). As in the previous Chapter, supervisors assessed extra-role behaviours (i.e., OCB) of their work teams with an adapted version of the individual focused items of Lee and Allen (2002). The fitted model indicated that shared (aggregated) perceptions of psychological contract fulfilment in co-worker relationships are significantly related to supervisor ratings of comparative team performance (β = .262, p < .001) and team OCB (β = .221, p < .01).

In Chapter 5, perceptions of psychological contract fulfilment in co-worker relationships are hypothesized to moderate the relationships between perceptions of work design, such as autonomy and job complexity, employee behaviours and employee well-being. At the individual level of analysis, perceptions of psychological contract fulfilment are significantly related to task proactivity (β = .152, p < .001), citizenship behaviours (i.e., $\beta_{OCB\text{-}I}$ = .288, p < .001; $\beta_{OCB\text{-}O}$ = .184, p < .001) and work engagement (β = .295, p < .001).

In Chapter 6, psychological contract beliefs between co-workers in team environments are measured along three dimensions; fulfilment perceptions of agreed obligations (i.e., PCF kept promises), perceptions of the obligations promised by other co-workers in the team (i.e., PCC - team inducements) and perceptions of the obligations by the employee to the other co-workers in the team (i.e., PCC - team contributions). The models in this Chapter showed that fulfilment perceptions in work teams are significantly related to work engagement (β = .735, p < .001), citizenship behaviours ($\beta_{OCB\text{-}I}$ = .326, p < .001) and job satisfaction (β = .277, p < .01) and negatively with turnover intentions (β = -.142, p < .05). Furthermore, the mutuality in co-worker psychological contract beliefs also showed significant effects on various work outcomes. For example, perceptions of inducements are negatively related to work engagement (β = -.445, p < .001), citizenship behaviours ($\beta_{OCB\text{-}I}$ = -.374, p < .001) and job satisfaction (β = -.269, p < .01), whereas perceptions of employee contributions showed positive relationships with emotional exhaustion (β = .204, p < .01) and citizenship behaviours ($\beta_{OCB\text{-}I}$ = .228, p < .01).

In Chapter 7, psychological contract fulfilment perceptions in work teams partially mediated shared perceptions of HPWS and (individual level) organizational citizenship behaviours (i.e. OCB-I). However, a hypothesized equivalent mediation effect with task proficiency was not significant in the multilevel models. A closer examination of the construct correlations revealed that perceptions of psychological contract fulfilment correlated significantly with organizational citizen behaviours ($r = .203$, $p < .01$), whereas the correlation with task proficiency was non-significant ($r = .075$, *ns*) (Chapter 5 confirmed).

Implications of this research

Overall, it can be concluded that co-worker psychological contract beliefs in teams shape work attitudes and behaviours of employees and teams. Although not conclusive, the empirical studies in this dissertation give a strong indication that co-worker contract beliefs are related to attitudes and behaviours in service organizations and that organizational factors (partly known from previous contract research) play a role in the formation of those psychological contract beliefs.

The research findings suggest that the application of psychological contract theory to relationships between co-workers in teams is useful for explaining attitudes and behaviour at work. With regard to the implications for practice, the empirical studies stress the importance of HRM and the role of the team managers in influencing co-worker psychological contract beliefs, team dynamics and performance. For example, organizations may choose to have work teams with similar or with different but complementary goal orientations (Chapter 4). The studies in Chapter 3, 4, 6 and 7 point to the role of exemplary, supportive behaviour and leadership styles of managers, while Chapters 5 and 7 point to the role of HRM in enabling and encouraging participation in the team. Finally, managers can provide opportunities for teams to strengthen social influence processes (Chapter 4). However, with regard to the practical design of a cost-effective HR architecture aimed at influencing the relationship between psychological contracts in teams and customer-oriented behaviour, more research is needed.

Limitations

As with every research report, readers can make critical comments with regard to writing skills, the variables studied, the research design, the interpretation of the study results and the methods used for data analysis. In the next sections of this Chapter, we will address some of these issues.

The list of organizational factors and work outcomes examined in this dissertation is certainly not exhaustive. That means in effect that the empirical studies in the previous

chapters have taken a narrow interpretation of the research questions and may have left aside in the analyses some important potential antecedents and consequences of psychological contract beliefs in work teams. For example, in developing and maintaining excellent service not only the quality of the relationships between organization, employees and work teams is important, and vice versa, but also the perceptions of the consumers of the offered service. Relationship quality is a likely predictor of service-mindedness and customer-oriented behaviours of employees, whereas costumer perceptions of the offered service as high quality is a likely measure of the effectiveness of the strategy of excellent service. As service companies strive 'to build lasting customer relationships' (Smith, 2018), meta-analyses of the effects of service quality (Carrillat et al., 2009) and e-service quality (Blut et al., 2015) have shown that high ratings of service quality are an antecedent of customer satisfaction, psychological attachment of the costumer to the company (i.e., attitudinal loyalty), and the willingness to buy again (i.e., repurchase intentions). Marketing scholars and practitioners see customer satisfaction as a necessary condition for the success of a strategy of excellent service, but realize that satisfaction alone is not sufficient. Especially the attitudinal loyalty and repurchase intentions of customers are important for future buying behaviours. This is because loyalty and repurchase intentions indicate the willingness of customers to engage in a relationship with the company.

In Chapters 4 and 7, 'customer satisfaction' was incorporated in the mediation models. However, customer satisfaction was not treated as a separate construct, but was one of the six items in the team performance measures. Supervisors rated customer satisfaction, whereas customer ratings of performance (i.e., service quality) by employees and teams in the service relationship were completely omitted from the analyses. That means in particular that we do not know how perceptions of events, procedures and practices directed at customer service (Hong et al., 2013) as part of psychological contract beliefs and appropriate employee behaviours (e.g., Ehrhart et al., 2011) translate into customer experiences. It might therefore be concluded that omitting the employee-customer interface in the study of relationships between psychological contract beliefs and work outcomes is a major shortcoming. However, in the research preceding this dissertation it was decided to focus on these relationships from an organizational science perspective and to neglect the direct and indirect effects on customer satisfaction, loyalty and purchase intentions. These choices were partly determined by limitations in sampling design, in particular the use of student-researchers in the data collection phase, and by the author's preferences.

In the previous chapters, multiple statistical techniques were used for hypothesis testing, such as multiple regression, exploratory and confirmatory factor analysis, path analysis and structural equation modelling (SEM). The overall objective was to find empirical evidence for relationships between co-worker psychological contract beliefs and work behaviours and performance both at the employee level and the team level. The analyses focused on the direction of the observed relationships, the relationship strength (i.e., correlation) as well as causality. However, the research design of most studies in this dissertation did not meet all the conditions necessary to infer valid causal claims from the observed effects.

First and foremost, it is important to specify the causal mechanism (i.e., a scientific theory) (Rosenbaum, 1984) of the proposed relationships. Without theoretical support, it is not possible to unambiguously disentangle the relationships among constructs as Taris and Kompier (2006) demonstrated for three competing cross-sectional mediation models. Chapters 3 to 7 of this dissertation elaborated further on these causal mechanisms in the respective theoretical framework sections.

Second, Pearl (2009) argues that researchers cannot substantiate causal claims from associations alone, because "some causal assumption must lie behind every causal conclusion that is not testable in observational studies" (p. 99). In Chapters 2 to 7, correlation was presumed absent or non-significant among the exogenous variables in the models. However, in Chapter 5 correlation was expected between the predictor variables of job autonomy and job complexity in the moderation models, while both variables were treated as exogenous as a result of programming requirements in IBM SPSS AMOS software.

Third, causal inferences become stronger when third variables do not affect the relationship between cause and effect. Hair (2006) argues that causal inference is often less certain because of relationships between the predictor constructs (i.e., multicollinearity) in the structural models. In Chapters 2 to 7, mediation and moderation variables and controls were added to the models and correlations were computed with significance tests to identify problems of collinearity.

Finally, to establish "the effects of causes" (Holland, 1986, 1988) in causal inference, significant covariance (correlation) between the variables of interest is necessary, but not sufficient. As it takes time for a cause to exert its presumed effect, models examining the antecedents and consequences of psychological contract beliefs must incorporate a time order (Chambliss & Schutt, 2018) of the variables following the temporal priority principle (Rankin & McCormack, 2013). That is, causes (i.e., independent variables) must precede their effects.

To infer valid causal claims from observed effects, a research design that involves a 'true' experiment is certainly the most powerful. An experimental design allows researchers to determine whether associations exist between the research variables and to establish a time order. Furthermore, an experiment controls for third-variable effects (i.e., spuriousness, Kenny, 1975) by randomly assigning subjects to experimental and control groups. However, a true experimental design is often not feasible and a quasi-experimental design is used to test causal hypotheses. Quasi-experimental designs retain several components of experimental designs, but lack random assignment (White & Sabarwal, 2014). For an overview of quasi-experimental designs, see Shadish et al. (2002) and Campbell & Stanley (2015).

Experimental and quasi-experimental designs have been used in team performance studies. For example, Saavedra et al. (1993) and Wageman (1995) examined the effects of task dependency on team performance in an experimental design and a quasi-experimental design, respectively. More recently, Boies et al. (2015) studied the impact of leadership style and Mao et al. (2016) studied the effects of team size in two fine examples of experimental design. The effects of controlled teamwork interventions on team performance in a meta-analytic review can be found in the study by McEwan et al. (2017).

However, the need for generalizable findings (i.e., the Achilles heel of experimental design) has motivated a large majority of researchers to opt for non-experimental designs, such as used in survey research. Good examples of non-experimental studies, published in the last ten years, with topics relating to this dissertation are Mach et al. (2010) (on the role of trust and team cohesion in team performance), Bal et al. (2013) (on psychological contract beliefs and work engagement), Mathieu et al. (2015) (on team cohesion), De Cooman et al. (2016) and Gibbard et al. (2017) (on perceived person-team fit) and Ruokolainen et al. (2018) (on relationships with well-being and in-role performance). What these examples of non-experimental designs have in common is that these studies combine theoretical support of the proposed relationships with longitudinal data to establish time order.

The reader will note that the empirical studies in this dissertation are in line with this research tradition of non-experimental design. Although the studies pay much attention to all conditions mentioned above for valid causal claims, demonstrating that there is a theoretical basis for the proposed relationships and that effects of third variables are unlikely to be significant, all findings (except Chapter 3) are based on cross-sectional data. Gollob and Reichardt (1987) argue that causal models in survey research using cross-sectional data are not satisfactory because these models omit the effects of values

of prior variables and the effects of prior values of the same variables, and fail "to specify the length of the causal interval that is being studied"(p. 80), implying that all findings in this dissertation must not be interpreted in terms of causality. However, by establishing associations and directions of relationships, the empirical studies have laid an important foundation for potential antecedents and consequences of co-worker psychological contract beliefs.

Directions for future research

Future research should extend the mediation and moderation models to other antecedents and consequences in preferably longitudinal sampling designs. As the measurements are often part of a much larger study, it might be valuable to rely on shortened team obligation and member obligation scales. Shortened scales do not necessarily produce methodological problems (Bal et al., 2017), because shortened scales can also be valid and reliable (Raja et al., 2004; Schaufeli et al., 2006). However, the psychometric properties of the shortened scales should be thoroughly tested before use as indicators of latent constructs.

The models would benefit from the inclusion of further control variables to control for team diversity (e.g. age, education, functional or technical background), whereas inclusion of traditional employee-organization or employee-supervisor psychological contracts in the models may produce new interesting points of departure for research. For example, how do co-worker psychological contracts in work teams coexist with traditional ones? Do both contract types interact in the sense that they might co-evolve? Does it matter whether teams are composed of members of different organizations or that an employee is part of multiple teams? Will perceptions of co-worker contract fulfilment be more easily shared in work teams as opposed to employee-supervisor contract perceptions? What may strengthen or weaken (shared) perceptions of fulfilment of co-worker contracts and are these moderators different from traditional contracts in work teams?, and so on.

Finally, the mediation effects of co-worker psychological contract beliefs in HR -performance relationships could be explored further by examining alternative explanations for the stronger within-team indirect effects of HR on outcomes compared to the between-team indirect effects (see Table 7.4). It might be that traditional psychological contracts with team supervisors as agents of the organizational HR approach may play a role. Supervisors implement HR practices in their teams, but their attitudes and behaviours may compensate the effects of these practices. Future research will have to reveal whether this interaction effect is simply non-existent, positive or negative.

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Summary

For researchers and HR managers, the perspective of the so-called psychological contract has become increasingly popular to better understand employer-employee relationships. From a practical and theoretical point of view, this is not surprising. The psychological contract can be used in a changing labour market for different types of organizations and labour relations to explain attitudes and behaviours of employees. Rousseau's definition of the psychological contract used in this thesis reflects this flexibility. Meta-analyses have confirmed that violations of psychological contracts in particular can have major effects on employee involvement, satisfaction and performance in the workplace.

The empirical studies discussed in this dissertation assume that psychological contracts are formed in relationships between colleagues in a team and that evaluations of these contracts can influence attitudes and behaviour towards consumers. Because the existing psychological contract scales are focused mainly on employer-employee relations and not focused on relations between employees (in a team) who are at the same level in an organization, a new scale was first developed to measure the content and the evaluations of these contracts. The development of the new psychological contract scale and its use in different models that predict work attitudes and behaviours are the most important contributions of this dissertation to psychological contract research. In addition, this dissertation takes a first step in determining which organizational factors influence the content and evaluations of psychological contracts between colleagues in a work team. A connection was made with what is known from existing psychological contract research into employer-employee relationships (e.g. the role of HR practices and perceptions of job design). Attention was also paid to two factors that have so far received little attention in traditional psychological contract research; the role of the type of employment contract ("de flexibele schil") in work teams and the extent to which members of work teams pursue the same work goals (goal alignment). The research results show that HR practices as experienced in the workplace and job autonomy are related to evaluations of psychological contracts between colleagues in a team. While job autonomy and task complexity is usually experienced as motivating, it has been shown that evaluations of psychological contracts in teams can reduce the positive effects of greater autonomy and task complexity on attitudes and behaviours. For the other variables studied, the type of employment contract does not appear to play a significant role in psychological contract evaluations in teams, and that type of work goal is important if one wants to measure the effects of goal alignment in teams on evaluations of psychological contracts, work attitudes and behaviours.

In this dissertation, the work attitudes and behaviours at work as potential effects of psychological contract evaluations receive more attention than potential antecedents. In this respect this dissertation does not deviate from traditional psychological contract research.

It has been shown that in self-directed teams of students the obligations of colleagues in the team as part of the co-worker psychological contract are related to the obligations, they themselves experience towards others in the team (at a later point in time). Moreover, it appears that better compliance with the contract obligations by colleagues in the team in the student's perception leads to more commitment to the team.

For teams of employees in service organizations, the relationship between evaluations of psychological contracts in teams and work engagement, job satisfaction, work attitudes, work behaviours and performance was investigated at individual and team level. Positive evaluations of psychological contracts (fulfilment) led to higher levels of work engagement, more job satisfaction, more commitment in the workplace and to comparatively better performance of teams.

In summary, psychological contracts between colleagues in teams can be a good predictor of individual and team performance, work attitudes and behaviours. As is the case with traditional employer-employee contracts. The empirical studies in this dissertation do not convincingly demonstrate this, but they do provide strong indications for it. Although frequent use has been made of causal models in this dissertation, the lack of data collected at several points in time (longitudinal sampling design) makes itself felt here. Because the datasets of employees in service organizations in this dissertation are predominantly cross-sectional in nature, statements about causality are certainly a bridge too far. However, the desire for more scientific knowledge and curiosity (see Albert Einstein) is a driving force of science and in this dissertation of the use of (multilevel) causal models.

Samenvatting

Voor onderzoekers en HR-managers is de invalshoek van het zogenaamde psychologische contract steeds populairder geworden om relaties tussen werkgevers en werknemers beter te begrijpen. Vanuit praktisch en theoretisch oogpunt is dit niet verwonderlijk. Het psychologisch contract kan in een veranderende arbeidsmarkt voor verschillende soorten organisaties en arbeidsrelaties worden gebruikt om houdingen en gedragingen van werknemers te verklaren. De definitie van Rousseau van het psychologische contract die in dit proefschrift wordt gebruikt weerspiegelt deze flexibiliteit. Meta-analyses hebben bevestigd dat met name schendingen van psychologische contracten grote effecten kunnen hebben op betrokkenheid, tevredenheid en prestaties op de werkvloer van werknemers.

De empirische studies die in dit proefschrift worden besproken gaan er van uit dat er psychologische contracten worden gevormd in relaties tussen collega's in een team en dat evaluaties van deze contracten invloed kunnen hebben op houdingen en gedragingen richting consumenten. Omdat de bestaande psychologische contract instrumenten vooral gericht zijn op werkgever-werknemer relaties en niet op relaties tussen werknemers (in een team) die op hetzelfde niveau in een organisatie staan, is er eerst een nieuw instrument ontwikkeld om de inhoud en de evaluaties van deze contracten te kunnen meten. De ontwikkeling van dit instrument en het gebruik ervan in verschillende modellen die houdingen en gedrag voorspellen vormen de belangrijkste bijdragen van dit proefschrift aan psychologisch contractonderzoek. Daarnaast is een begin gemaakt met het onderzoeken wat nu bepalend is voor de inhoud en de evaluaties van contracten tussen collega's in een team. Daarbij is aansluiting gezocht bij wat bekend is uit bestaand psychologisch contractonderzoek naar werkgever-werknemer relaties (bijv. de rol van de HR-praktijk en percepties van de inhoud van het werk). Ook is er aandacht besteed aan twee factoren die tot nu toe weinig aan bod zijn gekomen in traditioneel psychologisch contractonderzoek; de rol van het soort arbeidscontract ("de flexibele schil") die iemand heeft in het team en de mate waarin iedereen in het team dezelfde werkdoelen nastreeft (doelcongruentie). De onderzoeksresultaten laten zien dat de HR-praktijk zoals dit ervaren wordt op de werkvloer en autonomie in het werk in verband staan met evaluaties van psychologische contracten tussen collega's in een team. Terwijl autonomie in het werk en complexiteit van taken meestal als motiverend wordt ervaren, is aangetoond dat evaluaties van psychologische contracten in teams de positieve effecten van grotere autonomie en complexiteit van taken op houdingen en gedrag kunnen verkleinen. Voor wat betreft de andere onderzochte variabelen blijkt het soort arbeidscontract geen significante rol te spelen in psychologische contract evaluaties in teams en dat het belangrijk is te kijken naar het soort werkdoel als men

effecten van doelcongruentie in teams op evaluaties van psychologische contracten, attituden en gedragingen wil meten.

In dit proefschrift krijgen de attituden en gedragingen op de werkvloer die een mogelijk gevolg zijn van psychologische contract evaluaties meer aandacht dan de mogelijke aanleidingen (oorzaken). In dit opzicht wijkt dit proefschrift niet af van traditioneel psychologisch contractonderzoek.

Aangetoond is dat in zelfsturende teams van studenten de verplichtingen van collega's in het team als onderdeel van het psychologisch contract samenhangt met de verplichtingen die zij zelf ervaren naar anderen in het team (op een later tijdstip). Bovendien blijkt dat het beter voldoen aan de verplichtingen door de collega's in het team in de perceptie van de student leidt tot meer commitment naar het team.

Voor teams van werknemers in dienstverlenende organisaties is op individueel niveau en op team niveau de relatie onderzocht tussen evaluaties van psychologische contracten in teams en de betrokkenheid van werknemers (eng. Engagement), tevredenheid met het werk, werkattituden, gedrag en prestaties. Positieve evaluaties van psychologische contracten (eng. Fulfilment) leidden bij de onderzochte werknemers en teams tot een hogere werk betrokkenheid, meer tevredenheid, meer inzet op de werkvloer en het vergelijkenderwijs beter presteren van teams.

Samenvattend kan worden gesteld dat psychologische contracten tussen collega's in teams een goede voorspeller kunnen zijn van individuele en teamprestaties, attituden en gedrag. Net als bij traditionele werkgever-werknemer contracten het geval is. De empirische studies in dit proefschrift tonen dit niet overtuigend aan, maar leveren er wel sterke aanwijzingen voor. Hoewel er veelvuldig gebruik is gemaakt van causale modellen in dit proefschrift doet het ontbreken van gegevens die op meerdere tijdstippen zijn verzameld (eng. longitudinal sampling design) zich hier gelden. Doordat de datasets van werknemers in dienstverlenende organisaties in dit proefschrift overwegend cross-sectioneel van aard zijn, zijn uitspraken over causaliteit een brug te ver. Kennisvermeerdering en nieuwsgierigheid ("curiosity", zie Albert Einstein) is een krachtige motor van de wetenschap en in dit proefschrift van het gebruik van (gelaagde) causale modellen.

Acknowledgements

During my long career in higher education, several colleagues have advised me to take my PhD. They thought this would be a good fit for me and I could do this well. Moreover, a PhD trajectory could make me feel more comfortable.

A number of years ago I was given a lot of free time due to circumstances. I decided to start working as an external PhD student at Tilburg University, Graduate School of Social and Behavioral Sciences (TSB). In consultation with my supervisor, René Schalk, a subject was quickly found.

This dissertation marks the end of the PhD trajectory. I owe many thanks to my supervisor René Schalk, my co-supervisor Sasa Batistič and Jeroen de Jong (supervisor in the first phase). Without your suggestions, comments, help, support and commitment, this project probably may have never succeeded.

Appendix A

Team obligations scale

Did the group or one student in your group promise you that the group would…	No, not at all.	Yes, but promise not kept at all.	Yes, but promise only kept a little.	Yes, and promise fully kept.	Yes, but I received more than promised.	Yes, but I received much more than promised.
Take your interests into account when making decisions.	0	1	2	3	4	5
Offer you the opportunity to learn during the project.	0	1	2	3	4	5
Help you to develop skills that you can also use outside of the project.	0	1	2	3	4	5
Value your competences and skills.	0	1	2	3	4	5
Pay attention to your problems and needs.	0	1	2	3	4	5
Ask for your help when it is busy.	0	1	2	3	4	5
Help you to get your job done.	0	1	2	3	4	5
Work on a project that we all support.	0	1	2	3	4	5
Take your opinion seriously.	0	1	2	3	4	5
Be proud of my achievements.	0	1	2	3	4	5
Work together based on trust.	0	1	2	3	4	5
Allow me to work in my own way.	0	1	2	3	4	5
Will work in a pleasant atmosphere.	0	1	2	3	4	5
Offer me the opportunity to work together in a pleasant way.	0	1	2	3	4	5
Offer me the opportunity to take initiative.	0	1	2	3	4	5

Appendix B

Member obligations scale

The past few weeks, I promised my group or students in my group that I would…	No, not at all.	Yes, but I did not keep that promise at all.	Yes, but I only kept that promise a little.	Yes, I kept this promise.	Yes, but I delivered *more* than I promised.	Yes, but I delivered *much more* than I promised.
Sacrifice myself for the benefit of the group.	0	1	2	3	4	5
Consider the interest of the group as my own interest.	0	1	2	3	4	5
Do everything to keep up the image of the group.	0	1	2	3	4	5
Only perform the tasks that I was told to do.	0	1	2	3	4	5
Work together with the rest of the group in a pleasant way.	0	1	2	3	4	5
Do a good job.	0	1	2	3	4	5
Help my teammates with their work during busy times.	0	1	2	3	4	5
Work longer than is required to finish the job.	0	1	2	3	4	5
Develop new skills if that benefits the group.	0	1	2	3	4	5
Be always on time.	0	1	2	3	4	5
Voluntarily take on tasks to make work of others more manageable.	0	1	2	3	4	5
Commit myself to avoid problems with other team members.	0	1	2	3	4	5
Share my knowledge and skills with the other team members.	0	1	2	3	4	5
Play an active role in team meetings.	0	1	2	3	4	5
Mediate when other members of the team have problems.	0	1	2	3	4	5
Make suggestions about how other members of the group can improve their work.	0	1	2	3	4	5
Enthusiastically perform tasks that I would rather not do.	0	1	2	3	4	5

Appendix C

Scale development

Items from Rousseau's psychological contract inventory (2008) complemented with scale items of psychometrically sound measures of psychological contract related but distinct constructs were selected and modified for a preliminary version of the team obligations and member obligations scale. The selected items for the team obligations scale are shown in blue below. The items used for the member obligations scale are shown in red.

Semi structured interviews with experts in the field have led to revisions and extensions of the preliminary instruments. A small pilot study with 15 students then led to new changes in the items. Some items were found unclear and confusing, and these items were rewritten.

Team dynamics

The measures "team cohesiveness" and "team meeting" originate from Seers (1989). The scale items of "team member exchange quality" reproduced below are derived from Seers, Petty & Cashman (1995).

Team-member exchange

Team-member exchange quality (TMX) "assesses the reciprocity between a member and his or her team with respect to the member's contribution of ideas, feedback, and assistance to other members and, in turn, the member's receipt of information, help and recognition of other team members" (Seers et al., 1995, p. 21).

1. How often do you make suggestions about better work methods to other team members?
2. Do other members of your team usually let you know when you do something that makes their jobs easier (or harder)?
3. How often do you let other team members know when they have done something that makes your job easier (or harder)?
4. How well do other members of your team recognize your potential?
5. How well do other members of your team understand your problems and needs?
6. How flexible are you about switching job responsibilities to make things easier for other team members?
7. In busy situations, how often do other team members ask you to help out?
8. In busy situations, how often do you volunteer your efforts to help others on your team?

9. How willing are you to help finish work that has been assigned to others?
10. How willing are other members of your team to help finish work that was assigned to you?

Team cohesiveness

1. Team members are hard to communicate with
2. Team has a strong sense of togetherness
3. Team members generally trust each other
4. Team lacks team spirit

Team meeting

1. Meetings good for expressing my ideas
2. Meetings valuable participation opportunity
3. Meetings practical way to keep informed
4. Meetings resolve tension and conflict

Leader-member exchange

In a review article of research into Leader-Member Exchange (LMX) theory, Graen and Uhl-Bien (1995) concluded that the 7-item LMX (LMX-7) was the most appropriate and recommended measure to measure LMX. The version of LMX-7 as shown in Table 3 (page 237) of the overview article is reproduced below. Note that the items for the supervisors are in parentheses.

1. Do you know where you stand with your leader. . do you usually know how satisfied your leader is with what you do? (Does your member usually know)
2. How well does your leader understand your job problems and needs? (How well do you understand)
3. How well does your leader recognize your potential? (How well do you recognize)
4. Regardless of how much formal authority he/she has built into his/her position, what are the chances that your leader would use his/her power to help you solve problems in your work? (What are the changes that you would)
5. Again, regardless of the amount of formal authority your leader has, what are the chances that he/she would "bail you out," at his/her expense? (What are the chances that you would)
6. I have enough confidence in my leader that I would defend and justify his/her decision if he/she were not present to do so? (Your member would)
7. How would you characterize your working relationship with your leader? (Your member)

Appendix.

Organizational Citizenship Behaviour.

Podsakoff et.al. (1997) empirically tested the relation between organizational citizenship behaviour (OCB) and the quantity and quality of work group performance. OCB was conceptualised on the dimensions of helping behaviour, sportsmanship and civic virtue.

Helping behaviour is a second-order latent construct consisting of Organ's (see Organ, 1988) altruism, courtesy, peacekeeping and cheerleading dimensions. The OCB measures were acquired from the work group themselves, group performance from company records. The group member assessments of OCB were aggregated by averaging scores to the work group level. The following items were retained after exploratory factor analysis with varimax rotation (see Table 1 on page 266 of Podsakoff et al., 1997).

1. Help each other out if someone falls behind in his/her work.
2. Willingly share their expertise with other members of the crew.
3. Try to act like peacemakers when other crew members have disagreements.
4. Take steps to try to prevent problems with other crew members.
5. Willingly give of their time to help crew members who have work-related problems.
6. "Touch base" with other crew members before initiating actions that might affect them.
7. Provide constructive suggestions about how the crew can improve effectiveness.
8. Are willing to risk disapproval to express their beliefs about what's best for the crew.
9. Attend and actively participate in team meetings.
10. Always focus on what is wrong with our situation, rather than the positive side. (R)
11. Consume a lot of time complaining about trivial matters. (R)
12. Always find fault with what other crew members are doing. (R)

Smith et al. (1983) defined citizenship behaviour of employees by 16 items. The items represented the final product of semi structured interviews with managers who did not belong to the organizations studied. The managers were asked to identify instances of helpful, but not absolutely required, employee behaviour at work. Factor analyses revealed that the scale items loaded on two fairly interpretable and distinct factors. The first factor was referred to as "altruism"; a class of helping behaviours aimed directly at specific persons. The second factor represented behaviour as a "good soldier" or "good citizen"; doing things that are "right and proper" for the sake of the system. This factor was referred to as "generalized compliance".

The citizenship behaviour items reproduced below loaded 0.5 and above on one factor and not on the other. Alpha reliability estimates were .88 and .85, respectively, for the altruism and compliance scales.

Altruism

1. Helps others who have been absent
2. Volunteers for things that are not required
3. Orients new people even though it is not required
4. Helps others who have heavy work loads
5. Assists supervisor with his or her work
6. Makes innovative suggestions to improve department

Generalized Compliance

1. Punctuality
2. Takes undeserved breaks (R)
3. Attendance at work is above norm
4. Gives advance notice if unable to come to work
5. Great deal of time spent with personal phone conversations (R)
6. Does not take unnecessary time off work
7. Does not take extra breaks
8. Does not spend time in idle conversation

Perceived Organizational Support.

Perceived Organizational Support (POS) represents "global beliefs concerning the extent to which the organization values their contributions and cares about their well-being" (Eisenberger et al., 1986, p. 501). The construct is part of a social exchange approach to organizations, an extension of economic[8] and affective[9] interpretations of commitment. The idea is that perceived support would encourage "the incorporation of organizational membership and role status into the employees' self-identity" (Eisenberger et al., 1990, p. 52).

In the Survey of Perceived Organizational Support (SPOS) half the statements were positively worded and half were negatively worded. The short form of SPOS is presented below. Note that in Eisenberger's original study all items loaded > 0.7 on the Perceived Support factor.

8 Economic costs of leaving an organization, economic benefits when the employee stays.

9 as assessed by the Organizational Commitment Questionnaire (OCQ) (see Mowday et al., 1979, p. 228).

Appendix.

1. The organization values my contribution to its well-being.
2. The organization fails to appreciate any extra effort from me. (R)
3. The organization strongly considers my goals and values.
4. The organization would ignore any complaint from me. (R)
5. The organization disregards my best interests when it makes decisions that affect me. (R)
6. Help is available from the organization when I have a problem.
7. The organization really cares about my well-being.
8. The organization is willing to extend itself in order to help me perform my job to the best of my ability.
9. Even I did the best job possible, the organization would fail to notice. (R)
10. The organization is willing to help me when I need a special favour.
11. The organization cares about my general satisfaction at work.
12. If given the opportunity, the organization would take advantage of me. (R)
13. The organization shows little concern for me. (R)
14. The organization cares about my opinions.
15. The organization takes pride in my accomplishments at work.
16. The organization tries to make my job as interesting as possible.

Psychological contracts

In the psychological contract inventory (PCI) (Rousseau, 2000), the content of the psychological contract is characterized along two dimensions: duration and performance terms. The "relational" psychological contract is a long term or open-ended arrangement based on mutual trust and loyalty; the "transactional" contract is an arrangement of short term, focused upon economic exchange. The "balanced" contract is a hybrid form of a relational and transactional: long-term and specified. Finally, the "transitional" contract is not a contract by itself, but a (negative) cognitive state of an employee.

To produce scales with high convergent and discriminant validity, each dimension is operationalized into 10 conceptually homogeneous components; 7 components for the contracts, 3 components for the perception of the relationship employer-employee.

Each component is measured by items with the highest item-total correlation and factor loadings > 0.4 on each factor (Rousseau, 2000). The wording and the layout of the items below are reproduced from a revised version of the inventory (Rousseau, 2008). The items of the transitional contract are excluded.

Employee Obligations

EE short-term

1. Quit whenever I want
2. I have no future obligations to this employer
3. Leave at any time I choose
4. I am under no obligation to remain with this company

EE loyalty

1. Make personal sacrifices for this organization
2. Take this organization's concerns personally
3. Protect this organization's image
4. Commit myself personally to this organization

EE narrow

1. Perform only required tasks
2. Do only what I am paid to do
3. Fulfil a limited number of responsibilities
4. Only perform specific duties I agreed to when hired

EE performance support

1. Accept increasingly challenging performance standards
2. Adjust to changing performance demands due to business necessity
3. Respond positively to dynamic performance requirements
4. Accept new and different performance demands

EE development

1. Seek out developmental opportunities that enhance my value to this employer
2. Build skills to increase my value to this organization
3. Make myself increasingly valuable to my employer
4. Actively seek internal opportunities for training and development

EE external marketability

1. Build contacts outside this firm that enhance my career potential
2. Build skills to increase my future employment opportunities elsewhere
3. Increase my visibility to potential employers outside this firm
4. Seek out assignments that enhance my employability elsewhere

Appendix.

EE stability

1. Remain with this organization indefinitely
2. Plan to stay here a long time
3. Continue to work here
4. Make no plans to work anywhere else

Employer Obligations

ER short-term [Note: low reliability]

1. A job only as long as this employer needs me
2. Makes no commitments to retain me in the future
3. Short-term employment
4. A job for a short time only

ER loyalty

1. Concern for my personal welfare
2. Be responsive to my personal concerns and well-being
3. Make decisions with my interests in mind
4. Concern for my long-term well-being

ER narrow

1. Limited involvement in the organization
2. Training me only for my current job
3. A job limited to specific, well-defined responsibilities
4. Require me to perform only a limited set of duties

ER performance support

1. Support me to attain the highest possible levels of performance
2. Help me to respond to ever greater industry standards
3. Support me in meeting increasingly higher goals
4. Enable me to adjust to new, challenging performance requirements

ER development

1. Opportunity for career development within this firm
2. Developmental opportunities with this firm
3. Advancement within the firm
4. Opportunities for promotion

ER external marketability

1. Help me develop externally marketable skills
2. Job assignments that enhance my external marketability
3. Potential job opportunities outside the firm
4. Contacts that create employment opportunities elsewhere

ER stability

1. Secure employment
2. Wages and benefits I can count on
3. Steady employment
4. Stable benefits for employees' families

Psychological Contract Fulfilment

Employee fulfilment

1. Overall, how well have you fulfilled your commitment to your employer
2. In general, how well do you live up to your promises to your employer

Employer fulfilment

1. Overall, how well does your employer fulfil its commitments to you
2. In general, how well does your employer live up to its promises

Team effectiveness

In the Team diagnostics Survey (TDS), designed to asses a model of team effectiveness (see Hackman, 1987; Hackman, 2002), team's ability to generate products or services that are satisfactory for customers is a joint function of three performance processes (Wageman et al., 2005, p. 376):

a. The level of effort members collectively expend on the task;
b. The appropriateness of team task performance strategies;
c. The degree to which the team uses knowledge and skills of team members in task completion.

The subscales that provide an overall measure of team task processes are reproduced below (see Wageman et al., 2005, p. 387):

Effort

1. Members demonstrate their commitment to our team by putting extra time and effort to help it succeed.
2. Everyone on this team is motivated to have the team succeed.
3. Some members of our team do not carry their fair share of the overall workload. (R)

Strategy

1. Our team often comes up with innovative ways of proceeding with the work that turns out to be just what is needed.
2. Our team often falls into mindless routines, without noticing any changed that may have occurred in our situation. (R)
3. Our team has a great deal of difficulty carrying out the plans we make for how we will proceed with the task. (R)

Knowledge and skill

1. How seriously a member's ideas are taken by others on our team depends more on who the person is than on how much he or she actually knows. (R)
2. Members of our team actively share their knowledge and expertise with one another.
3. Our team is quite skilled at capturing the lessons that can be learned from our work experiences.

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